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No. 2466.—VOL. LII.

LONDON, SATURDAY, NOVEMBER 25, 1882.

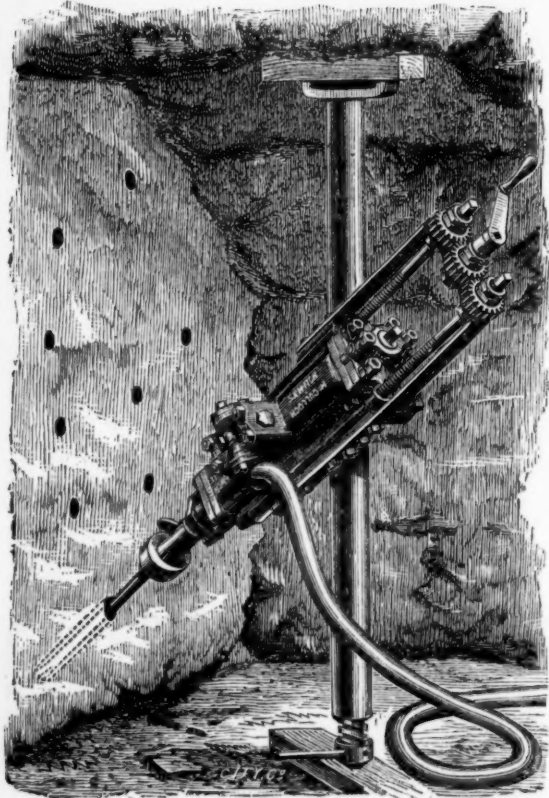
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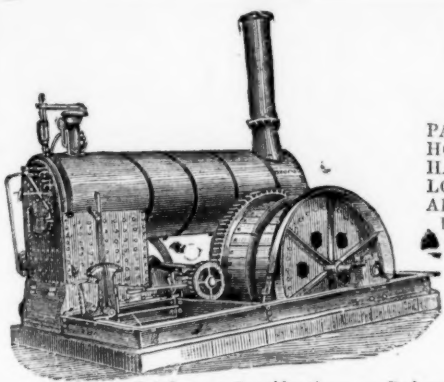
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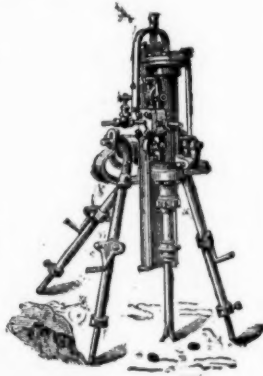
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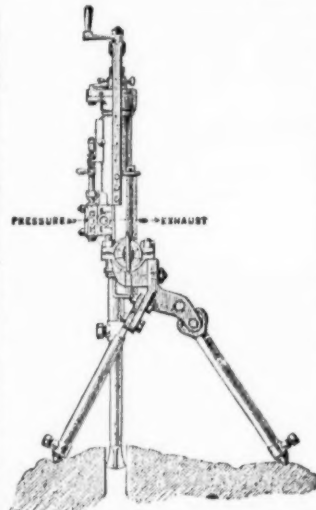
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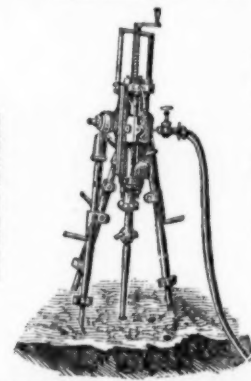


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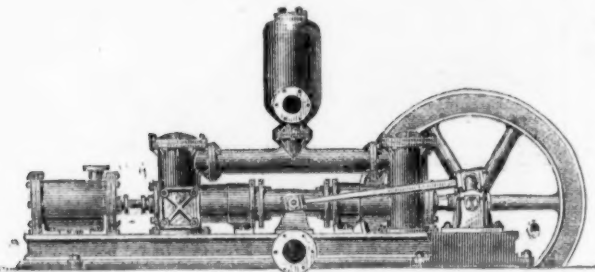
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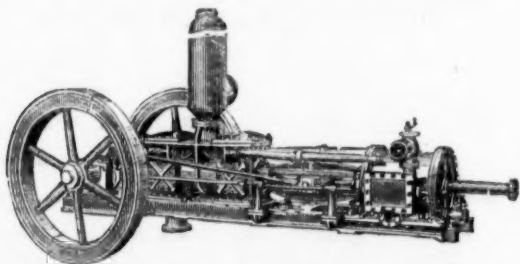
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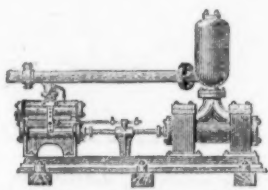
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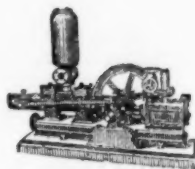
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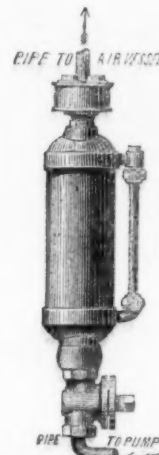
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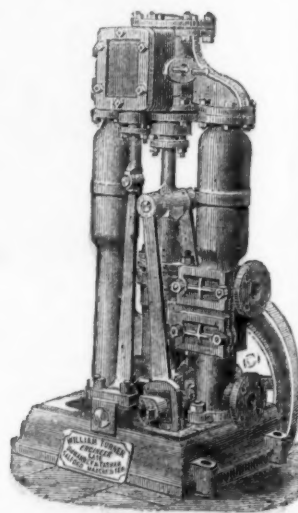
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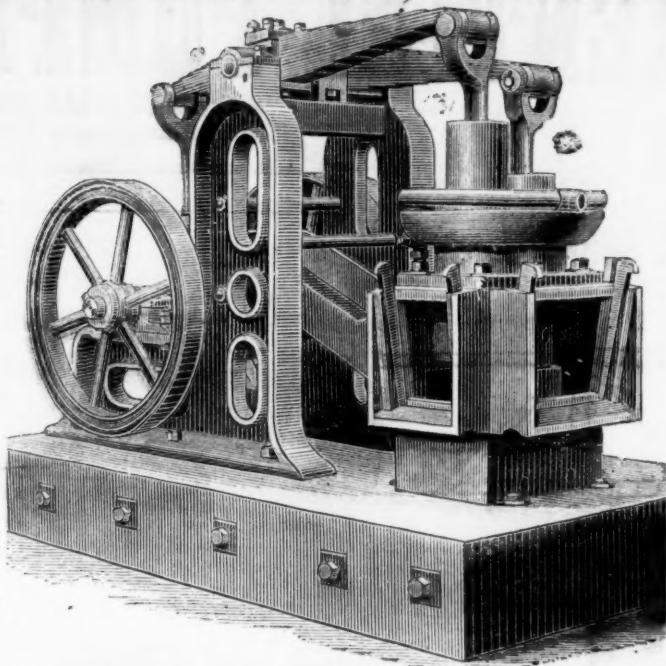
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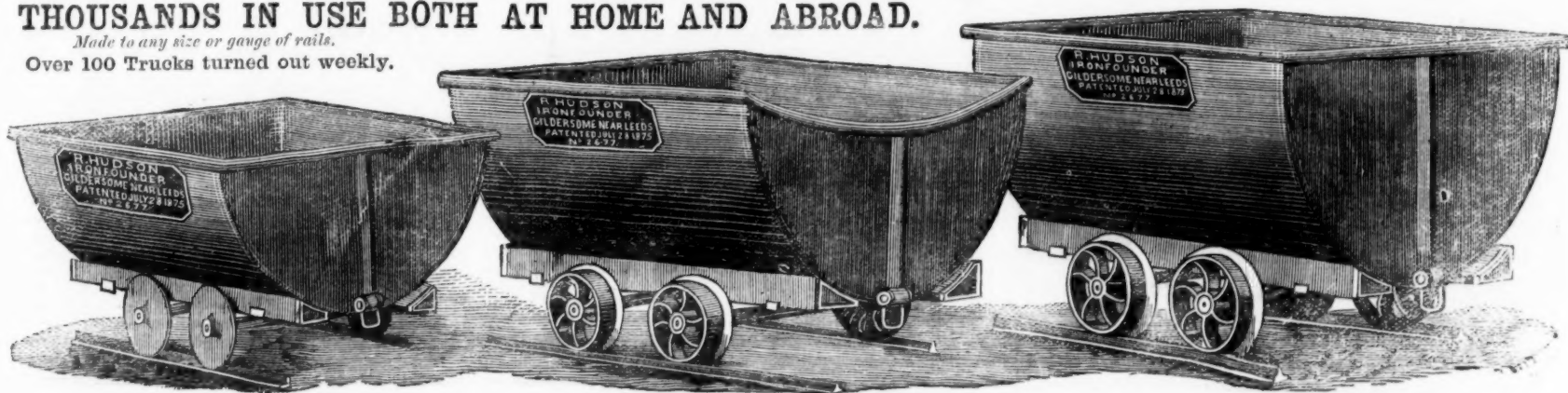
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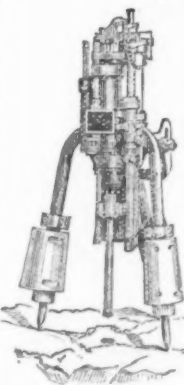
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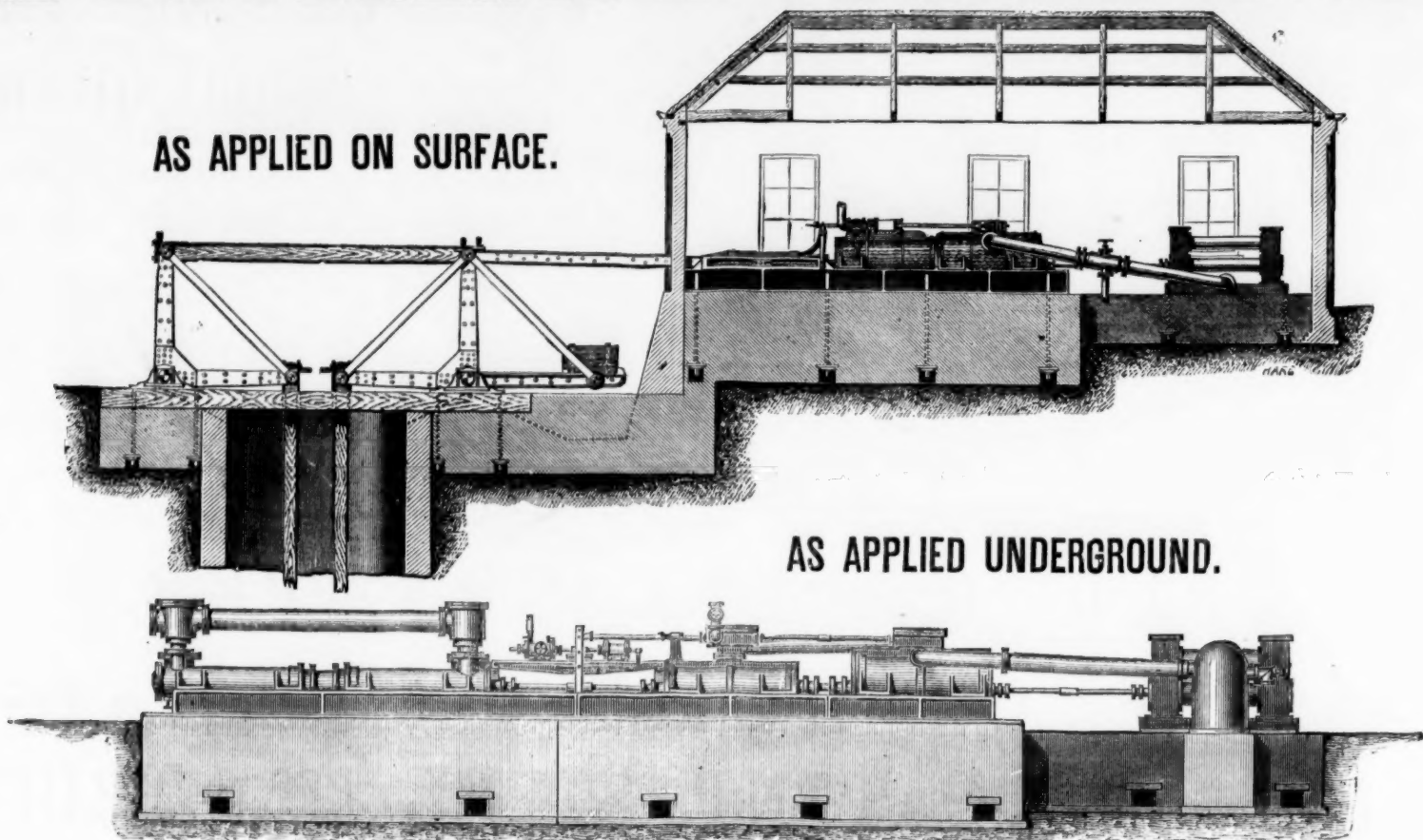
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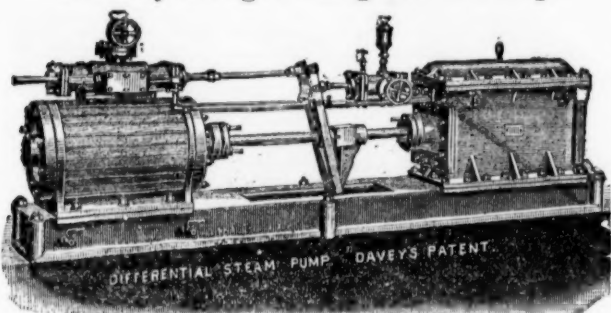


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12	6	24	6,500	250	90	104	130	4 1/2	2	2 1/2
12	7	24	10,500	180	96	110	136	5	2	2 1/2
12	8	24	13,500	140	100	114	142	6	2	2 1/2
12	10	24	21,300	90	120	136	175	7 1/2	2	2 1/2
14	7	24	10,400	250	110	130	156	5 1/2	2 1/2	3
14	8	24	13,500	190	120	145	165	6	2 1/2	3
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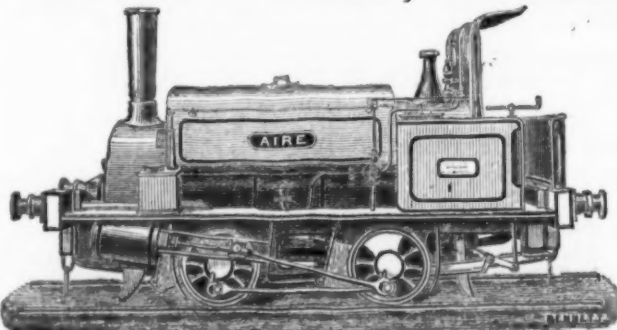
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Original Correspondence.

SOUTH AFRICAN DIAMONDS—JAGERSFONTEIN MINE.

SIR,—I perceive by the Mining Record of Jagersfontein, Orange Free State (Oct. 20), that umbrage has been very properly taken by the Jagersfonteinites at what the Kimberley Correspondent of the Mining Journal has written regarding the Jagersfontein Mine, although every diamond miner knows that if the Kimberley Correspondent's disparagement of the mine at Jagersfontein be based upon his opinion, and not upon some sinister interest which he desires to serve his knowledge of diamondiferous soil, cannot be worth a rap. The diamonds from that mine are of a far superior class than those from any other mine, finer large stuff is produced, and I feel certain that it will be the mine of the day. I have known Jagersfontein since 1870, when digging in the schist adjoining the present mine, and splendid stuff was turned out, so that the Kimberley Correspondent richly deserves the wagging he has got. Now, as to Mr. Finalyson and St. Augustine Mine, I think the Jagersfontein Mining Record of Oct. 20 is rather too severe; and further, their knowledge of St. Augustine Mine is very scanty. True it was rushed in 1871, but how many holes were sunk, and how deep? And what was the mode of searching for diamonds in those days. Why dry sorting the same as at Kimberley, and it is an undeniable fact that the very stuff thrown off the table as soiled and pronounced as debris at Kimberley Mine proved in very many cases when the washing came in vogue to be richer than the maiden soil. My reason for giving the above explanation is to show the rude way of working in the early days of dry digging.

As I said, the place now called St. Augustine was rushed and abandoned, not that it was non-diamondiferous, but because Kimberley was turning out trumps, and everybody trekked there. That any diamonds were found at that time I cannot say; I found none. One Druce, a diamond digger, located himself there, and got a depositing floor allotted to him, and for the purpose of carrying on his digging operations sank a well and obtained water. Giving up digging he offered all his appurtenances and floor for sale, which was bought by Mr. Letkie, to be used for the same purpose. Being manager of Letkie's ground I had the blue ground from Kimberley Mine thrown on the floor to pulverise. Water becoming scarce I had to deepen and drive in the well, and in so doing turned out blue ground. I had some of the same brought to Kimberley and shown to many old hands, who gave it as their opinion as splendid; and further, that it came from nowhere else but Kimberley. I did not tell them where it came from, not having tested the ground. I had a part of the floor thoroughly cleaned, and put about 12 or 13 loads which was taken from the well in it. When pulverised I had all the appurtenances scraped and well cleaned, and on June 11, 1878, I washed up with the following results:—First sieve, *nil*; second sieve, four diamonds; third sieve, sorted by overseer Miller, eleven diamonds, which were handed over to Letkie.

The same would have been made known at the time but for the small encouragement held out by Government—two claims for the prospector. Before leaving the fields I offered to various persons to show them the spot if they would compensate me. Question put by them—"Is it private or Crown lands?" When I said Crown land they answered—"No; I will have nothing to do with it." I left the diamond fields, and settled down in Cape Town as distiller. In 1879 I wrote to the Griqualand Government and asked them if I pointed out a new mine—after it being verified by their own working, or who they wished to appoint to verify my statement—what compensation they would give. I received no reply. Some time after a new Ordinance was promulgated, granting ten claims to the discoverer of a new mine. When I saw that there happened to be in Cape Town one B. Alexander, who worked in the well mentioned, and who had sold out from farming near Cape Town. I thought it a splendid opportunity to have him to go up and open the mine; he acquiesced, and we entered into an agreement, giving him the right to take, &c., a third party to test and verify my affidavit. On his journey up Finalyson was a passenger in the same coach, and Alexander took him into confidence, and entered into partnership. That is the first time that Finalyson knew of diamonds being found near St. Augustine's Church. He has tested and verified my affidavit; with what result is, of course, best known to those concerned; and I feel confident that it will prove what it is stated to be—a payable diamond mine.

I hope after this explanation that Messrs. Biddy, Reed, and Plummer, coupled with the Editors of Mining Record, Jagersfontein will take a different view of St. Augustine Mine, as they are undeniable facts that I have stated. I forgot to mention Druce said to me when the well, &c., was purchased, if it was not sold he intended to have washed the ground, as he was sure it was diamondiferous.

Cape Town, Oct. 24.

M. CROWLEY.

THE GOLD AND DIAMOND MINES OF SOUTH AFRICA.

SIR,—In my last letter I drew a line across the Kimberley Mine, dividing the good ground from the more questionable, and actually worthless ground. The ground marked north-west and south-west was formerly known as the Cape Company, and if it had been honestly and economically conducted it might have paid small dividends on about 1-20th of the amount at which it was put into a company, but up to the present they have worked at a loss of about 100,000*l*. The ground marked A. W. Hall belongs to a private gentleman now resident in England, and taken in the aggregate is worth from 40,000*l*. to 50,000*l*. sterling. The Vulcan Diamond Mining Company, capital 52,400*l*., has come to grief; the value of this property as a mere prospect is about 5000*l*. The Octahedron Diamond Mining Company, capital 66,500*l*., has also come to grief; the value of this property as a mere prospect is not much up or down 5000*l*. The ground marked Crystal Cape is a very fishy concern, and is not worth a farthing, and in my opinion will ruin every person who has anything to do with it. The ground marked Gates and Prosser is of no value, all the diamond soil up to the present having been thrown over the debris heap. I see no prospect of this ground improving, and I doubt whether it would have ever been located but for the mania of two years ago. The ground marked Rosza Volgie, James Schwartz, Ferguson, and Contact comes under the same category, and it is difficult to understand why any sane man can hang on to ground in which there is not the slightest prospect of success, and can only bring discredit on the really good companies.

Many prospectors are directing their attention to the neighbourhood of Hebron, and I hear their prospects are very encouraging, nearly all the diamonds that are being found there being of a very superior quality. The news from Jagersfontein during the week has been of a much more encouraging character, and several splendid stones are reported to have been found near Frame's claims. There is no question as to the quality of the diamonds at Jagersfontein being far superior to any other mine in South Africa, and if they could only get rid of the floating reef there is no doubt but that they would do very well; but the various companies are so badly managed that they require a thorough overhauling. Otto's Kopje has come to grief entirely through the over-reaching policy of the promoters. Kamfersdam Mine and plant will soon be in the hands of Messrs. Hampson, who will, without doubt, make a fine thing out of the transaction. The 6 per cent. dividend by the Barnato Company, and the 16 per cent. for the quarter by the British Diamond Mining Company, is very satisfactory, yet it does not cause anything like buoyancy in the shares. The Central will pay 10 per cent. for this quarter, and 15 per cent. for the next quarter is already earned.

All the companies in the Kimberley Mine which I have named as dividend-paying will demonstrate the truth of my estimates during the next 12 months; and those companies that I have named as of no value had better cease operations and save their coin, as there is no chance of their ever being profitably worked. The De Kaap gold field has completely collapsed. Thus it will be seen how true was the warning I gave through the Journal from the first. That there are a few places in the Transvaal where payable gold may be found I admit. For example, the four claims belonging to Hampson and White, and the one claim belonging to Davis, which are situated on Mr. Owen's farm, Lisbon, will pay to work. I know every inch of the Transvaal, and can point out every place that is

worth the attention of companies. The Spitz Kop contains four places that are worth working, and in two the prospects are fairly good. There is likely to be a severe struggle between the powerful chief Mapoch and the Boers. The Boers have been shooting down the Kaffirs so indiscriminately since they beat the English that Mapoch is driven to fight through sheer desperation. The small-pox throughout the colony still causes great anxiety. Up to the present we have managed to keep it out of Kimberley; but at Cape Town there has been over 800 deaths since the outbreak.

The farmers throughout the colony are so much afraid that they will allow wayfarers to perish on the fells or by the roadside rather than take them into their outhouses or go near them, and the following is a fair description of the country generally:—A Cape Town correspondent of the Free State Express writes—"Cape Town is a deserted city. No stranger enters its gates, and all those formerly resident within its walls able to 'clear out' have done so. Business is at a standstill, the hotels are empty, steamers are not allowed to land their passengers, children are kept from school, and the years of their lives are passed in idleness, entertainments are not visited, arts and sciences are neglected, and a flourishing town depopulated, but the liberty of the subject is not infringed. This is indeed 'Kismet'!"—Kimberley, Oct. 18.

CORRESPONDENT.

INDIAN GOLD MINES, AND THE WINDING-UP SYSTEM.

SIR,—The directors of the Ooregum Mine had hardly put their new scheme for carrying on the concern, by an issue of debentures, before the shareholders, when they were disturbed by the appearance of Messrs. Beall and Co., with a petition to wind-up on behalf of two shareholders, one of whom already denies having given authority for the proceedings, and requires the withdrawal of his name; the other, Mr. James Wilson, of Kilmarnock, it is to be hoped will do so likewise. Shareholders can get nothing by Beall and Co., not even a good revenge on the past directors for their vile management and useless expenditure. The assets of the company are valuable, and it is well to let lawyers finger them, and wreck the last chance the shareholders now have held out to them of realising a return for their money? The plea before the court is that the property is worthless. What do certain experts, Bell-Davies and R. St. Stephens, say to this? Is their veracity, repute, and honour at stake or not in the reports they have made? The last report of the latter gentleman is only a confirmative repetition of previous assurances testified to again and again. In his last, dated Aug. 26, 1882, referring to the Munday air shaft, he says: "The several small strings of quartz which were observable in the winze sunk by Capt. Bryant have so far united as to form a good substantial quartz vein of about 2½ to 3 ft. thick. The quality of the stuff taken from this sinking is not at all inferior to what has previously been extracted from the 80 ft. level winze, and which I do not think will mill out less than 2 ozs. per ton. A pile of stuff now at grass shows fine stones of visible gold, and my best washings have been of a highly satisfactory character." And from his report, January, 1882, thus: "Since the completion of the assay-house in October (1881) I have carried out a great number of assays of the quartz raised from the various prospecting pits without a trace of gold generally. From the Munday winze and the quartz field at the battery the assays have almost uniformly furnished good results; a series of 40 assays giving an average of close on 2 ozs. per ton." Again, "If the quartz stacked for the gravitation stamps ten samples of picked stone (carrying no visible gold) yielded an average of 9 dwts. 14 grs." If all this be true, and the present directors believe in it, there is good reason for their desire to raise a further capital of 12,000*l*. in debentures as a mortgage on the estate and assets of the company. They also renounce their fees till a dividend is declared, and offer to take more than their *pro rata* share of full debentures. This looks like confidence and business. But it puzzles me that they should want so large a sum seeing, from their circular, that the necessary works and machinery, &c., the reduction works, engines, tank, boilers, stacks, shops, offices, gravitation stamps, pumps, &c., costing above 9000*l*. are ready on the ground, and a huge quantity of quartz piled on grass. With all this, and the prospect of crushing at an early date to prove whether there be gold there in payable quantities or not, is it well to cast away this last chance, and have a wreck for the benefit of the lawyers? The Ooregum is one of the most advanced of all the mines in the Mysore district, and the present Chairman, Mr. Low, has so altered the face of the prospect that if the debenture scheme succeed, as it is desirable it should, the value of the mine will be tested and revealed before many months have gone, and the shareholders may yet rejoice in their venture.

A. S.

Oct. 22.

GOLD MINES OF INDIA.

SIR,—I have read the letters of Mr. F. Kensington in the Journal with more than usual interest, and I must say he has a remarkable memory. I do not wonder at the bitterness felt concerning his opinions. That there was gold here ages ago there is no doubt, but in what quantities it is hard to tell. Certain it is, the natives could work them in a way which would be no earthly use to Europeans financially; but it has been proved now a thousand times over that even the natives never worked the so-called quartz, but little soft veins alongside of it, and which quite died out as soon as it came near the hard rock. Sometimes to a depth of 80 ft. or over they actually left the quartz standing. Nor is it very difficult to imagine how they did it at that depth. When we consider that there may have been a despotic Rajah, with thousands of natives his slaves, the small cost for their maintenance, the manner of their working—*i.e.*, open cuttings, throwing the refuse behind them, in fact, to the natives now it is no great "wonder." As to natives wearing ornaments of gold from washings in the nullah or veins in the present day it is worse than nonsense, and no one out here believes that there is a "reef" in the whole that will produce 1 dwt. of gold to the ton. What the English public think are reefs are, in my opinion, no more than "blows," generally dying out at a few feet in depth. Though sometimes to shoot down to 90 ft., they are very short. The greatest length of any I have heard of is 81 ft. in the Mysore Mine, 40 ft. deep.

Of Colar Mine it is only due to say it is managed by one of the most practical, industrious men in the whole district, who has infused such a spirit of economy into every department under his charge as is not again found on the whole field. In Mysore Mine they have never, that I can find, returned an ounce of gold, although they have stamped, I believe, over 60 tons, and had the Maharajah of Mysore to start the crushing. I do not think, however, they expect to stamp again here, for the erection of the big stamps has been suspended for the last six months. I am told the workmen are surprised to see the reports of their mines in the Journal. They say there is no truth in them as regards reefs and gold. I believe they are trying to raise more capital at Nundydroog; but I fear it cannot be by the thought to raise gold, for this mine is no exception to the rest, unless it is in having less reefs, blows, or quartz. But when one sees such large quantities of various kinds of machinery which is lying useless in different camps, all stamped with the same brand, and the proprietors of that brand managing some of the mines, and having an influence in others, then it is easy to agree with the general opinion here, that they have already made great profits, and to raise more capital only means greater profits to the proprietors of the foundry at which it is made.

Colar, Oct. 30.

ONE OF COLAR.

NEW CALLAO VERSUS WEST AFRICAN COMPANY—A COMPARISON.

SIR,—In reading the account of the meeting of the West African Gold Company in last week's Journal, I was struck with the prospect of success this company has attained, and it has led me to compare the two above companies prospects according to my own light, and also that I may get some of your numerous readers to enlighten me where wrong. I may state it gives me pleasure to notice this young company getting a demand for its property, as it goes to show a healthy tone in such matters where results are certain. The New Callao has, I believe, been in existence for about two years, and so far as known they have no demand for their fine property. This company can boast of as good roads to the mine, as favourable freight,

labour as plentiful and cheap, climate and situation for health better, living cheap, water pure, and abundance of this latter power for mill purposes, saving the erection of steam-power and all its costliness, the property itself pretty well developed to thoroughly confirm its abundant riches, and specimens of quartz at home showing and proving its wealth; and to crown all, 16 lodes of good thickness proved to exist thereon, all showing gold. What more does any property require to ensure a market? On the other hand, we have this West African Company, as I have mentioned, in a complete state of infancy, so to speak, going as yet upon paper reports by experts, no development worth speaking of, cannot show dug out specimens from their mine lodes that can prove and show the real test of permanent riches, their climate risky, living, labour not any cheaper than the New Callao, and the only thing I see is that it is near the sea coast—a blessing for health and transit cost if we are to believe its Chairman. It seems to me this young company cannot show a whit more favourable characteristics than the New Callao property can place before the public, and assure a safe and certain profitable return for outlay. Then, as to the disposal and remuneration, this young company has done handsome both in shares and £ s. d., and the board management is creditable in this respect. This they have all done, and success within reach, with a property not nearly so tested and proved as the New Callao stands to-day, and not, I am told, nearly so valuable. How is it?—Leith, Nov. 22.

N. N.

THE NEW CALLAO COMPANY.

SIR,—With reference to the plan of "J. B. J." in the Journal of Nov. 18, respecting the above company, I as a shareholder quite agree with his views, and strongly recommend him to call upon the directors to take the matter into early consideration, and then call a meeting of the shareholders with a view of forming another company for working a small portion of this most valuable property. I am sure we have the gold there in large quantities; it only requires working out by energetic and good management, after which we shall get handsome returns. The more we hear from the highest and best authority of the valuable Venezuela gold field, of which New Callao forms a part, convinces us with the fact that it is the richest the world has ever seen in this century, and shareholders will soon rejoice in knowing that they hold shares in one of the richest gold mines in the world.—Sheffield, Nov. 21.

J. E. S.

NEW CALLAO.

SIR,—In regard to the letter of "J. B. J." in your last week's Journal, I am doubtful about the realisation of his ideas, though he puts them before us clearly enough. One or two things certain are, that there exists abundance of property, and from all testimony of great value, there exists abundance of high class yielding lodes thereon, which for richness cannot be the least doubted. So far the company's prospectus has been surely verified. The next step was the sending out of Mr. Skerchly to develop the mine, by sinking on the Rowbottom lode and erecting the stamps, which, we were told, he took with him. Looking back to this item of fact, one naturally wonders, after such lapse of time, if ever these went out? If so, were they ever erected? Presuming so, what have they done? We were surely promised returns of some sort within a few months, at least, a reasonable time; but, so far, I have yet to learn of any practicable crushings as yet been attempted or is in progress. We have had enough of estimated riches, but we await to learn what is the practicable results in quartz crushing, and no theoretical hypothesis such as "J. B. J." gives will suffice. "J. B. J." is afraid the property is too large. Possibly so, as circumstances presently exist. And if his plan could be carried out, the remedy lies within its apparent weakness.

As it is I fail yet to see why the funds and energies of the company are not meanwhile concentrated on the Rowbottom lode, thereby developing it to some profit, and enable the company to swim a little more easily. And when the real working returns of crushing are duly published, showing its great wealth, then and then only will the shareholders have the property eagerly sought after, and no doubt better remuneration will be got. "J. B. J.'s" plan is well as a theory, but can he assure us that the money will readily be subscribed by the public at present? The public now want practicable results and not supposition, and estimates of probable returns based on theory. On the whole, I am just afraid that "J. B. J.'s" plan, though good, is hopeless, and smacks Micawber like; the company is evidently at present just in that state, waiting until some offer may turn up to enable them to go on. Meanwhile can no possible return be got from working so rich a lode, where evidently the quartz is there in hundreds of tons. Or has that lawsuit absorbed the funds, and all work at a standstill at the mine? If so it behoves the shareholders to stand firm together, and try and lift the company out of the slough of despond. And, on the other hand, let the board take the shareholders a little more into confidence as a body on their plan of management on the past and future, then there would be less fault-finding, grumbling, and discontent which has recently prevailed. I am at one with "J. B. J.'s" suggestion that the board call us together for consultation and advice.

W. B.

Leith, Nov. 21.

THE IRON INDUSTRY OF NEW SOUTH WALES.

SIR,—The subjoined extracts from an article on the Eskbank Iron Works, the only ones at present at work in New South Wales, which appeared in the Lithgow Mercury, will be interesting to many readers of the Mining Journal. It may be well to mention that Lithgow is about 90 miles from Sydney. Upon entering the gates and passing the office nearly the first things we meet, says the writer, are the coke beds, one of which is a flame, and several others smouldering, with men attending to them. Near, we come to the mouth of the Eskbank coal pit with a fronting or face which shows a bed of coal 8 or 10 ft. thick. The colliers have driven into this to a distance of about 300 yards, in two drives, leaving a centre untouched to support the band, 3 in. thick, which acts as a clean roof. Small iron tramways are laid down, along which the coal is brought to the mouth, which is nearly level with the surface ground outside, so that there is no difficulty in loading and removing the coal to the main line of railway. The small or slack coal is used on the works, the cobs or larger pieces are exported.

In wandering about the coke beds and other places we soon get into deep mourning like the workmen, our patent leather wellingtons being nicely coated with excellent dust. We can see the huge blasting furnace near, and the steep incline tram along which the iron ore and limestone, both principally from Blayney, are conducted and shot in at the top. The trucks conveying the ore are drawn up the tram (about 130 ft.) by a wire rope, the engine used for hauling being an apparently new horizontal one of 7 or 8 horse power, recently on view at the Intercolonial Exhibition by Messrs. Drysdale and Roberts, of Sydney, from whom it was purchased.

Our next place was the principal engine-room, to the engine that forces a continuous stream of heated air into the furnace fire. This is a powerful blast-engine of about 70-horse power, controlled by Mr. James Aston. The tyre of the fly-wheel is 6 in. thick, and the wheel itself about 18 ft. in diameter; the piston of the engine having at least a 4 ft. stroke. This engine has no connection with the working man's eight hours a day movement; for it never stops by night or by day once it is set in motion. It would not do to let the fiery furnace of Nebuchadnezzar get cool. In the room adjoining there are three boilers about 26 ft. long by 5 ft. 6 in. in diameter. In looking round the base of the furnace to ascertain how it was fed with fuel we came across a representative of one Mephistopheles near the furnace door with a shovel in his hand instead of a three pronged barbed fork, and plenty of coal (and may be brimstone) at his back. He seemed very happy at what was roasting in the furnace. The ore, as smelted, is run out about every 12 hours into pig moulds or any other mould as required. These moulds are on the ground floor, of course, in the moulding shop.

We next went through the workshops, where we saw lathes both large and small, screw and bolt making machines, and a variety of other pieces of machinery, all worked by steam, even to the finishing of articles of merchandise. And from this huge shop we were introduced to the forge-room, another very large open building well

roofed. The raw or pig iron is removed from the mould to this forge by tram. Here are four mill furnaces and a mill engine of about 90-horse power, four large smiths' forges, a large planing machine, four screw and bolt machines, a vertical drilling machine, straightening apparatus for iron rails, reheating appliances, and machinery for rolling or facing rails that have suffered by long use on the main trunk lines of railway. There are also four donkey pumps, and a Nasmyth's hammer. The forge rollers are worked by a double engine with a locomotive cylinder, a merchant engine for iron merchandise, two reheating and eight puddling furnaces, and altogether about 200 men are employed. Five inch iron bars or ordinary tram rails can be cut here by machinery with the same ease as a tailor cuts his patterns with scissors. It would take an auctioneer's clerk at least half a day to make an inventory of the articles either in this forge or the workshop.

It is unfortunate that the ironworkers can only get ore enough to enable them to make half time. They have been working of late, experimentally, as I understand, on the co-operative principle. With an ample supply of iron ore and limestone this principle could be better tested. It is rather discouraging that at the commencement under this co-operative principle the supply of ore should not be more abundant. Yet it is so far satisfactory that the men know perfectly well the true reason of their inability to make full time. There is thus no ill-feeling engendered, as one frequently sees, between employers and the workmen. The capital invested in the purchase of the ground and plant for these ironworks must be considerable. That the enterprise is worthy of a generous support from the Government can hardly be questioned by any competent person who visits the place and takes into consideration the various industries to which it gives stimulus in the neighbourhood. A bonus in these days may be looked upon by some statesmen as objectionable. Still it is not too late to afford some legislative protection for the local manufacture and home or local use or consumption of such iron as can be used; for it is only a question of time and a little encouragement when iron rails of a superior quality will be manufactured, not only in this but in the other foundries of the colony. If those most interested in the continuous working of this establishment have friends at court, their influence could not be more prudently and beneficially exercised than in directing especial attention to the ironworks of this locality. The successful working of this enterprise means comparative wealth, comfort, and happiness to an increasing population. All dwelling at Eskbank or Lithgow or near, whether storekeepers, bakers, butchers, tradesmen generally, even publicans and merchants in Sydney, have a special interest in the progress of these ironworks, as well as the collieries, just as much as the ironworkers or colliers themselves; and if a judicious agitation were initiated with a view to secure such encouragement from the Government as might seem to an extent commensurate with the capital invested, greater improvements would be the result both in the character of the machinery and the quality of the iron. Fair inducement would certainly cause more capital to be expended in improving the plant, just as a squatter would willingly pay a higher rental for greater inducement by security of tenure, and low freights for wool. So the farmer would benefit as well as the producer of iron ore, limestone, or coal, if he had a little inducement afforded to send his produce to market at a lower freight than that now ruling.

Although this is at present the only iron property worked there is an estate in the same district, a few hundred acres in extent on which they have just discovered an iron ore lode 4 ft. thick, an assay of the first 100 tons from which gave 60 per cent. of metallic iron, so that it may hereafter prove a rival to Eskbank. R. D. A.
Sydney, Sept. 30.

MEXICAN MINES.

SIR.—Observing in the *Mining Journal* of Sept. 9 an enquiry as to the Old Bolaños Mine in Mexico, I beg to inform your correspondent that the mine in question is situated in the State of Jalisco, on the east side of a branch range of the Sierra Madre, and near the town of Bolaños. This town is on the stage road from Zacatecas, or more correctly Jerez, to towns in the neighbouring state of Zacatecas. It is, I am led to understand, a good property, but not at present worked. I might add that Mexican mines are fast coming to the front, and at present afford first-class opportunities for investments. JOHN ROBERTSON, M.E.
Las Vegas, New Mexico, U.S.A., Nov. 4.

ST. JOHN DEL REY MINING COMPANY.

SIR.—I think shareholders of the St. John del Rey will do very unwisely to accept the suggestion to alter the stock into 17 shares. Such an alteration would no doubt suit dealers on the Stock Exchange, but for investors the 17 share is an abomination. Mr. Schofield says investors do not like to risk an investment with so large a "turn" against them. What is the fact? The turn on St. John del Rey is 10, or say 6 per cent. on an investment of 100. If instead of stock 17 shares were issued it is likely a closer price than 1/2 would be quoted (say) 1 1/2, or on an investment of 100, 117. If a change is at all advisable 107 shares would be best. It is possible a man might wish to invest 107 in a concern, but quite inconceivable that he should wish to invest 17. On Cape Copper the "turn" is 2 per cent., on Tharsis 2 1/2 per cent., on Mason and Barry 1 1/2 per cent., and many other examples of the reasonable quotation of large shares might be given. But look through the list of 17 shares, and 1/2 is the almost invariable difference in "buyer and seller" price. At par this means 257, on an investment of 100, and proportionately more in the unfortunately too numerous cases where prices are at a discount. I know it will be said closer prices can be had by negotiation. No doubt this can be done when there is speculation in the shares, but in a dull market the seller is at the mercy of the dealer. TEN POUNDER.

MINERAL RESOURCES OF SCANDINAVIA.

SIR.—I notice in last week's *Journal* that a rich deposit of gold is said to have been discovered in Norway, and I am led to believe by a gentleman who has travelled extensively in Norway and Sweden that those countries have a great future before them in respect of their vast resources of precious minerals. As an instance he relates that when in Sundswall (Sweden) he gathered from a storekeeper that the peasants who hunt for game in that district had been in the habit of purchasing gunpowder only of him for a long period, so at last the storekeeper ventured to ask of one of the peasants how it was that he never bought bullets or shot; the peasant replied—"Oh, we find plenty of lead in the ground and make our own shot." The storekeeper obtained permission to visit the place where they got lead from, and a sample of the ore was brought home by the gentleman referred to who went to the trouble of having it assayed by Messrs. Johnson and Mathew, and they discovered that the specimen contained 22 ozs. of silver to the ton. I think from other information I have gathered that capitalists instead of going to such distant places as Colorado or Africa, would do well to turn their attention to Norway or Sweden, which are undoubtedly very rich in minerals, and besides being so near to home it is important to bear in mind that labour is cheap and very plentiful in the latter countries. J. T.

THE NORWAY COPPER MINES COMPANY.

SIR.—Whoever may be the correspondent in last week's *Journal*, who signs himself "A. G. C." (we do not appear, however, to have any shareholder on our register with those initials), he seems to have written either with some unaccountable animus, or else under a strange misapprehension of the facts. If a shareholder, it is a pity he did not apply here for correct information, instead of rushing into print with unfounded assertions and presumptions. In the first place the board of directors remains identically the same as at the time the prospectus was issued. In the next place, as "A. G. C." could readily have seen, had he looked at the prospectus, the 10 per cent. dividend was guaranteed by the vendors, who undertook to provide the necessary funds for payment of the whole 10 per cent. during each of the first two years, or so much of it as the company would not be able to return from net profits. This arrangement has been, and is being, strictly carried out, and thus the dividends have not been what "A. G. C." fears, "just a return of the call

money." This agreement was entered into, because it was thought the mines would not be properly developed much before the expiration of this period. "A. G. C." further states he is informed that (irrespective of the vendor's deferred shares) only 5000 shares have been taken up, whereas 23,941 is the exact number applied for and allotted. It should also be stated that the directors did not proceed to allotment until, by agreement with the vendors, the terms for purchase were considerably modified. As to the assertion that the vendors have been offering their shares for sale, I am asked by them to state that, since allotment, they have never offered for sale a single share of either description. With reference, lastly, to this inuendo that the accounts will not be forthcoming at the meeting, I have only to state that the auditors have been for some time at work upon them, and that this supposition of his is as wanting in accuracy as every other statement in his letter.

The company's consulting and mining engineer is proceeding to the mines this week, so as to be back in time for the forthcoming meeting of shareholders, next month, when they will receive from him the latest and fullest reports and information, and will be in a position to judge as to the value and promise of their property. London, Nov. 23. CHAS. JAS. COURTIS, Sec.

GLEANINGS FROM GERMAN AUTHORS.—ON LODES.—II.

SIR.—Lodes are the richest repositories of the precious and common metals. In them are found ores of all the metals, as iron, copper, tin, lead, antimony, zinc, arsenic, mercury, silver, and gold. Such minerals as graphite, coal, and rock salt are never found in lodes. Metalliferous veins are either true lodes, flat veins, or contact lodes (occurring at the line of junction or contact of two dissimilar rocks). Lodes may occur in all possible rocks in which fissures can be formed and filled up. The filling up of a fissure requires a long period, and thus it is that for the most part the older or primitive rocks are richer in ore deposits than the younger formations; not unfrequently unfilled empty fissures are met with in the latter. Most metallic veins are found, therefore, in unfossiliferous or very slightly fossiliferous strata, and the fewest in younger rocks in which fossils are plentiful. There are, however, exceptions. Metalliferous veins are known in granite, porphyry, greenstone, trachite, gneiss, mica-schist, clay-slate, grauwacke, limestone, dolomite, and also in sandstone. No lodes are found in clink-stone (phonolite), basalt, coarse conglomerate, or gypsum; nor do they often occur in syenite, and hornblende schist. Lodes occur either singly, or more frequently several together; generally not one fissure but many are formed. When several lodes traverse a rock they run either approximately parallel, or they intersect each other; if they intersect they retain at the junction the same composition as each possessed before—a proof that the two lodes are contemporaneous—or the contents of the one cut through those of the other and break its continuity; the lode cut through is the older or first-formed, the intersecting lode is the younger or later formed. From olden times it has been a maxim that richer deposits occur at intersections or junctions; this is, however, not always the case, for examples are known where the junction is poorer or without ore. This old supposition is probably based on the fact that sometimes in stopping away the ground at those points more ore is found than elsewhere, because not one but two lodes are being worked. The younger of the two lodes may heave the older; it does not necessarily follow that the throwing lode must be valueless. Most lodes crop out at surface, and may be easily found by costeaning; many, however, have no outcrop, and can only be discovered by penetrating the rock in search of them. A lode may split into two lodes, or two lodes may unite and form one; a splitting up of the lode sometimes occurs on its entering another kind of country rock which the fissure could not penetrate. Particular care should be taken that in following a lode no branch or feeder should escape notice. Lodes occur either intimately blended with the enclosing rock, and are then more difficult to work, or are separated from it by a wall or walls, with in general a parting of clay or mild rock between, which facilitates the breaking of the ground. Slickensides often develop themselves on the walls. The ore occurs in various ways in the vein; either the lode is ore throughout or only partially so, and the method of working must vary accordingly. Strings and nests of ore are sometimes found in the country rock near the lode, and enough in some cases to pay for working. Not unfrequently the lode is worthless, and the containing rock only productive and valuable; many tin lodes afford such examples. Some lodes are only ore-bearing where they cross the bedding of the strata; in the middle of a stratum they are without ore. Examples of this are found in lead lodes which traverse limestone or dolomite. It is not always that the lode fissure is quite filled up, empty spaces, called vugs or druses, occur, and are often lined with beautiful crystals of ores and minerals.—*Pelltheli, Nov. 22.* J. G.

THE ADVANCE IN WAGES, AND ITS EFFECT ON THE SAFETY OF THE COLLIERY.

SIR.—It is not my intention to discuss the question as to whether the advance is justified or not; but from all appearances the men have gained their point. Following the advance given to the men in many cases a rise has been established in the price of coal. This will in all probability be followed by the men claiming a further advance in a month's time or so. The action of the men is not confined to an advance of wages, but also to restriction in the output of coal by shortening the hours of labour. All this has a tendency to jeopardise the safety of the collieries. The men in consequence of the success of their movement have their minds upset, and this in turn prevents in many cases proper attention being given to their work; the payment of higher rate of wages induces them to play when they should work. The shortening of the number of hours causes them to put in extra exertion to get out the extra number of tubs they have been in the habit of doing when working longer hours. Managers of collieries and officials are all afflicted by the uneasy condition of affairs which arises after the success of the men. The time taken up in negotiations and meetings would be better employed in the active duties of the colliery. No one knows better than the deputy that after an advance of wages he is not in a position to insist upon the strictest discipline. The advantage of more money and less work to the colliers is doubtful, particularly to those who are single and have no family responsibilities or requirements for extra money. The number of hours from leaving the pit and bedtime that have to be filled up is a loss of time that is very prejudicial to the welfare of the collier or the encouragement of thrift. More money is expended in the public-house, betting becomes rife. Staying at the place of meeting till turned out is not conducive to the safety of the colliery, as the condition of such men's minds and feelings is not so evenly balanced as to take kindly to any correction on the part of the officials; and if constant changes are taking place it only adds to the uneasiness that must always ensue—disorganisation. This season of the year has generally been the one when disastrous explosions and accidents in mines take place, and it is also the time of the year when an upset on the question of wages takes place. The main cause of complaint regarding the rate of wages is the over production of coal, and in some districts the heavy freights to be paid are an additional grievance. Combination on the part of either masters or men will never be carried out for any length of time loyally, and cannot become effective. "What is one man's loss is another man's gain," and the same may be said of districts. There have been suggestions made to cure the evil, but I will venture to make one or two that would, I think, tend to improve the state of the coal trade, the moral position of the collier, and the safety of collieries. Let the deputies, firemen, and colliers begin their duties at reasonable hours, and not have to turn out in the dead of night and finish their work in the middle of the day or early in the afternoon. Let the pit have a rest during the night, except so far as repairs are concerned. Dispense with the "butty" system where it exists, and above all, put an end to the use of powder. It is an extraordinary condition of affairs that after the thousands of lives sacrificed, the fabulous amount of money and property lost, caused by blasting in coal mines, that an enlightened people should allow it to continue. In the writer's opinion, if the masters and men would assent to these suggestions more good would result to the owners of collieries, the men, and even the public, than

by all the legislation that has taken place affecting mines during the last 20 years.

A Royal Commission has been sitting for two or three years to deal with this and other questions; but, alas, for the good supposed to be derived taking place. I am afraid the remarks made by an experienced and aged gentleman is correct:—"Royal Commissions are a quiet way of shutting people's mouths. Did you ever know any kind of good come from Royal Commissions?" I confessed that I did not, but hoped to see a better result from this one, and that it would prove an exception to the rule, when the long-looked-for report did appear it would contain some suggestions that would eventually result in legislation in the cause of humanity, practically prohibiting the use of powder, and putting an end to the inevitable destruction of so many human lives. The advantages to be gained would be manifold. All collieries would be handicapped fairly as to the getting of coal; a natural restriction would take place; pits would not be pulled about so much; the roofs would be less liable to fall, lessening loss of life from this cause; an immediate diminution of the loss of lives from explosions taking place every year; the salvation of many a pit and money of proprietors; and many other advantages that would take too long to discuss would be the result. Nov. 13. PREVENTION.

[The above was written prior to the last sad explosion at Clay Cross.]

COPPER MINING COMPANIES.

SIR.—In September last you were good enough to insert a letter from me contrasting the price of shares in the Spanish and Chilean Copper Mining Companies. I then wrote that either the quotations of Rio Tinto and Mason Barry shares were too high, or that Panulcillo and Copiapo were too low. My anticipations as to the alterations which would take place in the market value of the shares when the dividends to June 30 were announced have been fully verified. Rio Tinto in September last were 26 1/2 per share, or 160 premium, they are now 24 1/2, or 140 premium. Mason Barry were 17 1/2 per share, or 70 premium, they are now 16 1/2, or 62 1/2 premium. Panulcillo remain singularly steady at 6 1/2, or 69 premium, while Copiapo have risen from 3 1/2 to 4 1/2, i.e., from 3 to 21 premium. I should add that the three first named companies are all quoted ex the interim dividends recently paid for the half-year ending June. These interim dividends were as follows:—

Rio Tinto, 12 per cent. per annum.
Mason Barry, 10 per cent. per annum.
Panulcillo, 15 per cent. per annum.

Rio Tinto and Mason Barry present no half-yearly accounts, and do not notify the balance carried forward; but the Panulcillo Company's accounts published last month showed a balance in hand after paying the 15 per cent. equal to another 5 per cent. The Copiapo Company makes up its accounts annually to June 30. These have just been issued. The net profits for the year were 19,733, which is 56 1/2 more than I estimated in September last. The company bring into the accounts from 1881 a large balance of 77,124, so that they have standing to the credit of profit and loss the large amount of £27,493. The directors have paid three small quarterly dividends of 1s. per share, amounting together to 7,132.

Leaving for distribution at the present time..... £20,363
It is proposed to declare at the meeting on Dec. 1 a final dividend of 8s. per share, making a total of 11s. per share, or 16 3/4 per cent. The present price of the shares carries this dividend. When the 8s. per share is deducted the price will look very low, at (say) 3 1/2, or only 11 premium.

It must be remembered that the profit of 19,733, was made during a period when the average price of copper was only 6 1/2 per ton. For the first three months of the financial year ending June last it was under 5 1/2. The present price of copper is 6 1/2. As to the prospects of the Copiapo Company the estimated profits are published monthly. The amounts for the first two months of the current financial year are given, with the earnings of the company in the corresponding periods of last year—

	1882.		1881.
Copiapo Profits.	Price of Copper.	Copiapo Profits.	Price of Copper.
July	£2370	£67	£1080
August ..	£1972	£68	£1330
			£59

The profits for September will be shortly announced to the shareholders.

The improved price of copper has of course largely added to the income of this and other companies. It is a matter for calculation if a company can distribute 16 per cent. for a period when copper was for half the time under 6 1/2 per ton, how much is it likely to earn with copper at 6 1/2, and upwards. Assuming that Panulcillo pay only 15 per cent. for the year, an investor at the present price—6 1/2—obtains about 9 per cent. on his money, and assuming that Copiapo pay only 13 per cent. an investor at 4 1/2 per share, ex the dividend of 8s., obtains more than 11 1/2 per cent. on the purchase price. It is evident from these figures that Panulcillo and Copiapo shares ought before long greatly to improve in value.

AN OBSERVANT INVESTOR.

MINING AS A BUSINESS AND COMMERCIAL PURSUIT.

SIR.—It has always appeared to me an anomaly since I have given serious attention to the subject that mining should be excluded from, or made exceptional to, ordinary business or commercial pursuits, and that it should be reduced to a questionable speculative procedure. Inherently there is nothing in mining peculiar to justify its exclusion from the common order of business or commercial enterprises. Its resources are for the time being hidden—that is to say, they require development, so do the resources of all other business and commercial pursuits, and all are equally involved at the outset. The resources of any and every enterprise, whether industrial or commercial, are only inferable from certain data at their incipient stages, those of mining are, or need be, no more precarious or problematical than are other speculative pursuits. All enterprise being more or less speculative, and that of mining properly embarked on and conducted is not more so than any other. The data on which it is legitimately founded is as clear, comprehensive, and intelligible as that upon which any other speculative enterprise is inaugurated. All are at the commencement intellectual schemes elaborated from facts—or fiction substituted to supply the place of facts—to the accomplishment of certain proceedings and certain results. The difference is that the resources of mining lie beneath the surface, and are somewhat obscure to the uninitiated. A veil of mystery has therefore arisen to involve it, which matured by scepticism and ignorance has come to be regarded as if possessing almost tangible proportions. Whereas all the mystery there is about it proceeds from the fictitious character which has been imported to it for purposes other than those pertaining to its merits. Men are found to obtrude themselves into its arena who know nothing of its phenomena or of its practical or scientific requirements, and to whom it is a *terra incognita*—an unknown region—into which they can reflect no interpenetrating light, nor out of which educe a rational or common sense idea. If to be involved in darkness constitutes what is considered to be the phenomenal mystery of mining, its dissatisfaction will not be the result of natural evolution, but if individual enlightenment practically and scientifically induced in those assaying to direct its operations and guide its destinies, the truth and the evil has been, and, to a large extent, still is that the term mining, as applied to many concerns, is a mockery of that term and industry—a misnomer, mining in its proper accepted signification takes cognisance of objects for objective purposes—the hidden mineral treasures of the rock bound coast—and takes advantage of every facility to expedite progress and accomplish satisfactory results. Why should mining as a speculative industry be looked upon and embarked on as though it were different from other pursuits kindred to it in character in their most prominent and important lineaments? To buy in the cheapest and sell in the dearest market is a maxim of commerce and trade. Why should it not be so in mining? What is the difference in the salient features between manufacturing and mining; both industries require a provisional outlay preparatory to

certain ends and objects. To buy in the cheapest market is the primal moiety of the maxim quoted in its relation to both industries, and applies with equal propriety, force, and significance to both as well as respects the first cost as the subsequent current costs of conducting the businesses. The terms upon which a mining grant or concession is obtained is vital to the success of the enterprise. Capital being the chief negotiable instrumentality of civilised nations aims in its commerce to secure more than its equivalent either in kind or condition. If we apply the principles of political economy, to which we should do, it should be begun at the beginning as well as rigidly observed and practised during future progress to final conclusions. I have already stated that the terms upon which a commercially industrial property is obtained is vital to its success as an enterprise. There is almost all the difference imaginable between a mining property encumbered with unredeemable liabilities, such as lords dues—wrongly so called—exorbitant for land whether permanently injured or merely occupied, water rents and other impositions, espionage, restrictions, and compulsions in respect of the operations unjustly exacted, stipulated for and covenanted in the generality of mine leases in England, and the freehold properties which may be obtained abroad. In this country, for instance, with a Government as good and as stable as our own, and much more liberal in the disposition of its landed property, principally for the reason, I presume, that it has much more to dispose of, and can well afford to be liberal, the fee-simple of mining sets, selected by intending purchasers themselves, can be had in sections unlimited in number of 20½ acres each at \$5=17. per acre. How very different this is from the bowing, cringing, and supplication of applicants for authoritative legal permission to develop the resources of other persons' properties on comparatively short tenure arbitrary, and in most instances exorbitant terms, dictated by the lessons themselves, and as it too frequently happens exclusively in their own interests, whilst the cost of leases embodying the authority for such adventures amounts to more in each individual case than the Government of this country charges for the fee-simple of 20½ acres. Besides there is no comparison of values, prospective or intrinsic, between such selections here and the ordinary average of mining grants in England, whilst the prospects of the precious metals are equally good, and more pronounced than are those of the baser commercial sort in that country. When investors, whether English or otherwise, shall have turned their attention to such selections for their mining enterprises, and prosecute them on the merits instead of fictitiously for market speculations, a new era will have dawned upon mining, and one of the most abused principal industries and sources of wealth of civilized life and enterprise will be popularised in the public estimation on the most substantial ground, and receive that recognition and support which its eminence and importance entitle it to. That there are properties to be had of the class I have indicated I know well, and can furnish some of them on terms unobjectionable to reason and common sense. I propose no premium but merely the provision of means for the development of the properties and making their resources available for a modest share of the profits, receiving nothing if nothing accrues. Statistics shows that mining in the United States is not only a source of vast wealth to the country, but of gain to its proprietors and patrons. And there is no reason why Englishmen, who of all others are the best prepared, should not be the best qualified to participate in such emoluments and profits. All are equally eligible and entitled to the accruing benefits of speculative and investing enterprise in this country, whether they be citizens, natives, or naturalised or foreigners, the only difference being that aliens cannot pre-empt lands or take any part in the political affairs of the country.

ROBT. KNAPP.

PRACTICAL MINING—SHAFT SINKING.

SIR,—In the Supplement to the *Mining Journal* of Nov. 11 I notice a communication signed "U. X." dealing with the above subject. Will your correspondent kindly say what were the dimensions of the engine-shaft at the Madonna Mine?

T. M.

CORNISH MINING.

SIR.—When we contemplate the past, present, and with imagination look at the future and judge it by the alterations and improvements which have been made in the past, we are inclined to say, as a distinguished writer has recently said, "that mining will evidently become the science of the sciences." It is doubtless no easy matter to give a short definition of the comprehensive word mining. It is admitted that mining is keeping pace with the other sciences of the day, and if it continues to improve and advance in the future as in the past, will obviously come to the front. A noted writer in the 12th century said "reformation never came in a flood," but when we read and think of the various changes and improvements which have been made in mining and in the machinery used in mining operations during the present century, we are at once disposed to remark that "reformation has come in a flood," as everything apparently has been revolutionised, and a new state of things now appears before the studios miner in his daily pursuits. Things which were once considered laborious, difficult, expensive, and impediments in mining operations are now done with comparative ease and facility. Changes and improvements have, by constant and strenuous efforts, been made in order to carry out more expeditiously than formerly the different kinds of work in developing the illimitable mineral resources of our country, which is particularly noted as famous for its metallic minerals. Much interest has been manifested by antiquarians and lovers of curiosity in tracing and recording the mode which our ancestors had of raising, dressing, and smelting their tin. Many a tourist and others have formerly been impelled by curiosity to view the ancient workings which afford ample room for contemplation as to the past mode of Cornish mining, and for contrasting the "olden times" with the comforts and advantages we now enjoy, there are but few among us who would not prefer to be connected with mining pursuits in 1882 than in the days of yore. Water in early times was considered one of the greatest impediments the miners had to contend with, as it often retarded their progress in attaining depth, and the proprietors were compelled to suspend their works in consequence of the inundation, their machinery being inadequate. The water question at present is of little consideration, as even a deep mine if it contains rich lodes is without much difficulty drained to the bottom with the large engines and pumping appliances now in use. The pumping machinery appears to have been altered and improved many times prior to the introduction of the plunger, which has been mentioned as perfect. When we look at the engines and pumping machinery in such mines as Wheal Hony and Trelawny and other mines in the western part of the county, we feel convinced of there being no difficulty in the present era of draining mines which have been deluged for years, nor does it seem difficult for those who possess inventive abilities to invent and improve machinery to perform work with more dispatch than in the days of old.

Many alterations and improvements have also been made in the hauling of the produce to surface—from the kibble drawn up by the windlass, commonly called tackle, to the horse whim, which has continued in use with various improvements to the present time, it being, however, superseded by steam-engines, &c., applied for drawing purposes. Contemplate the progress made in mining during the last 50 years—the Cornish engines have been improved and perfected; steam applied for rotary purposes, &c.; the reeds and rushes have been supplanted by the invention of safety fuse. Look even at the changes in the past 25 years. The unpairing use in our deep mines of the man-engine, an invention which will add years to the lives of miners, and is also an estimable boon to managers and agents.

The advantage of pulverisers has been fully recognised throughout the county, and the same remarks apply to wire ropes, skips, steel appliances, stone breakers, air compressors, rock-boring machinery, steam capstans, ventilating apparatus, and the various kinds of explosives, such as dynamite, tonite, compressed powder, and inventions and alterations which, as auctioneers usually say, are "too numerous to mention," without even attempting to advert to the useful and new machinery now in use on the dressing-floors. Machinery such as the self-acting frames which are at work in all the tin mines where the dressing of the slimes is attended to in a careful manner. From 600 to 700 of these useful frames have been erected in Phoenix United

since I worked on the dressing-floors about 13 years ago, consequently the number of frames and appendages erected in these mines clearly indicate that great profits accrue from the application of this kind of machinery for dressing the slimes.

After taking a retrospective view of the progression made in mining during the past century, no one can refrain from expressing a firm belief that mining will come to the front, and be the science of the sciences.—*Chestering Railway*, Nov. 18.

S. J. VINCENT.

DIRECTORS' DUTIES AND PAYMENT.

SIR,—Allow me through the medium of the *Mining Journal* to express opinions in respect to the desirability of associations being formed in large towns and cities to debate on the surroundings of public companies as to directors, and I would suggest in the formation of companies that the directors be placed on a footing with the shareholders as regards participation, that the good things they attach their names to, that they should be paid well when the mine or whatever may be the results foreshadowed in the circulars they issue. As a consequence it would be found that not one company in ten would be floated, that those who have had experience in the particular project considered desirable as an investment, and the circumstances connected with it upon their investigation showing a reasonable inducement of success, doubtless there would be found gentlemen who would risk their time as directors. It borders on the régime laid down with the patient with his medical attendant, only to pay for his services whilst in health, but to stop the pay when ill.

As regards the Chontales Company, of which I have had some considerable experience, I do not consider we have a director practically acquainted with the duties he has undertaken, and the money of the shareholders has been spent in a reckless manner. I allude to one instance, the payment of 1000*l.* to a gentleman to visit our mines, and as far as I can understand was only at the mines about 10 days. As to the length of time I have frequently asked for information, but the secretary has refused to answer me. I have paid four visits to London this year, and on each occasion I have been to the Chontales office, on one occasion for the purpose of taking the names of the different companies whose business is transacted at the Chontales office. There were several, and on entering the office the answer from one of the officials, taking the companies *au seriatim*, who was the secretary, I found that Mr. J. Jameson Turan's name was given in each case; and in each case I found the name of Mr. Baxter as one of the directors. I recollect when Dr. Ryan came to the front and was proposed as a director the objection taken; also when I introduced a gentleman, a Mr. Wethered, the opposition which appeared to emanate from the board. When in London last Saturday week Mr. Turan gave me to understand that I was the cause of Mr. Wethered not being chosen, in consequence of having expressed an opinion that the Bristol shareholders ought to be represented. At that time more than one-tenth of the shares were held by Bristol shareholders, and if a director who knew his duties and acted, it could be only for the advancement of the interest of the whole of the shareholders. I expressed my opinion to him that it was an infantile objection to make.

WILLIAM BALL PALMER.

Bristol, Nov. 22

SOUTH DEVON UNITED COPPER MINES.

SIR.—The importance of the near approach to the lode at Pickstone's shaft at the depth of 155 fathoms may in some measure be estimated by the remark of Mr. Peter Watson, at the general meeting of these mines in September last, when he stated that "Captain Hooper had said if they cut a course of ore there the shares would be worth 10*l.* each," a value for the mines of 420,000*l.*, which would give a premium of 378,000*l.* Pickstone's shaft is just in the middle of the course of ore which has been removed, and produced upwards of 250,000*l.*

The position was determined upon by one of the best practical mining agents in the county of Cornwall, he remarking at the time—"This being midway of the course of ore, which has extended through the Brookwood and the Emma Mines, I am placing this new shaft to command both of these properties, as they will have to be worked as one, and this is the right position for a shaft with that object." This agent obtained his mining experience from his father and uncle, who gave the shareholders of Tresevan Mine more than 400,000*l.* in dividends. The Pickstone shaft, therefore, is in the heart, so to speak, of the great course of ore that has gone to market, and no doubt will be found to be in a similar position in respect of all succeeding courses of ore in depth, so that levels can be extended west and east, with pretty much of a certainty of having no more breaks in the course of ore below the hard bar than was met with above it, a position which no other shaft upon the property commands. The present returns are limited to some 800*l.* worth of ore every two months, which small supply, as stated by the agents, is entirely owing to deficiency of drawing power; with the steam-whim, therefore, which is said to be in course of erection, ten times this quantity can be sent to surface.

The 50,000*l.* worth of reserves of ore, referred to by Mr. Bawden, the purser, would give 10 years' returns at the present rate; but with ten times the quantity being sent to surface it would give one year only. To what extent these reserves are monthly increased there are no statements before the shareholders to show; but there should be no doubt with the managing director, who projected the sinking of the new engine-shaft, that indications warranted a supply of ore at that rate for several years, and this being so the shares from the Brookwood part of the property alone would be safely set down as giving a value of 3*l.* to 4*l.* per share. In any case, I look with the greatest confidence for very large courses of ore at Pickstone's as the stratum in which the lode is found can be confidently relied upon for the production of copper ore; besides which there are other indications, which almost amount to facts, in respect of the district, so that I see no chance of a failure when I take into consideration all the points which, from close observation, has led to the discovery of all the copper the district has produced.

Nov. 23.

CHRISTOPHER ROBINS.

THE CALLINGTON DISTRICT, AND ITS MINES.

SIR.—It is gratifying to see further improvements in the district. At Prince of Wales there is an improvement, and ere long we shall be told of something good at Wheal Langford. The new pumping-engine for pumping the water from the Tamar to Gunnislake (Clitters) Mine is now at work, when larger returns of ore will naturally follow. Wheal Fortune is again going to start, with an additional 7500*l.* capital, sufficient, it is to be hoped, to soon get it in the Dividend List. The mine is very shallow, and should be sunk deeper, which they will be able to do now. The copper lode alone, I have every reason to believe, would pay dividends of itself. When the mine was worked under the name of Old Harrowbarrow they sunk to the 40, and returned a great many tons of ore, but the lode contained a great deal of arsenical mundic, which at that time was not only valueless, but very expensive to separate from the ore. As the mine is not more than two furlongs from the Coombe Arsenic Works, there will be many shillings a ton saved in carriage, which will make a very considerable difference at the end of every quarter, and the mundic from this mine is as high percentage as from any of the mines in the district. As far as the silver lode is concerned it makes in bunches or squats, so they might strike on one of them any day; the last they had while working under the name of Wheal Newton they sold from one bunch of silver ore 10,000*l.* in a very short time. No doubt there are hundreds of thousands of pounds worth undiscovered at the present time.

At Wheal Lusk the lode is very much improved within the last few weeks. I saw some very fine stone yesterday that were broken from the lode that were thickly impregnated with yellow and grey copper ore, and the matrix of the lode generally is everything that can be desired, except a course of ore. At Trebartha Lemarne they are now bringing up the leads to take off the water from the wheel and the floors while they are erecting the stamps, so as to commence stamping and preparing for market as early as possible; and as their tinstuff is of such high percentage they will soon be able to get their maiden batch of tin at the smelters. I hope the mining public will watch these two mines particularly, as I am quite satisfied

in my own mind that the shares will be very soon 400 per cent. above their present price. I shall be very glad to give any intending purchaser any information that I am able at any time in any mines in the district, as I am able to get the earliest information.

Callington, Nov. 23.

JOHN BUCKINGHAM.

WHEAL CREBOR.

SIR,—Will you kindly allow me space in your next issue to express my opinion with many mine managers of long standing relative to the complaints published by Mr. Watson in his weekly *Mining Circular* against the opposition he and his committee received at the Wheal Crebor general meeting last, in which is said "the meeting was not over till late on Friday; the wonder is that it was reported so well." So say I and everyone (else) interested is very much indebted to the members of the public Press for their assistance, particularly the outside shareholders who were so strongly represented by Captain Burgan in rescinding that so long aggravating "Committee practice" in fixing public inspecting days once a fortnight for the outside shareholders, and for themselves every days' communication from the mine, which suit stockbrokers very well, while the distant shareholders are out shivering in the cold, waiting for some advance in the shares which has passed off days before it comes to light. I have had long conversations with mine managers on the subject, who all agree that appointed public inspecting days are one of the worst evils connected with any mine of magnitude, which occupies the agent's time, and also hinder the operations of the mine. The men are ordered not to blast, and the mine must be clear of smoke, all hands idle during the time of inspection. Anyone knowing anything of practical mining knows this to be a bad "Committee practice." Captain Burgan being a mine manager, and of good authority, is deserving the thanks of every outside shareholder in bursting up such iniquitous practice to suit the purpose of the chosen few who are paid agents, and threatening to smash the mine by rescinding the lease of holding, which is said to be very stringent, unless the whole body of shareholders will come forward to establish the committee in the future management of the mine which is doing so well. But this raises another question. Would not the mine and the shareholders be better served if its entire management should be intrusted in the hands of a practical and efficient mine manager on the works? As outsiders, our impressions are that all shareholders have a right to inspect their property any day (except Sundays) without (any) interference with the manager or his men, or the operations of the mine in general without any provision. Let the agent and his men go on with their work, and the inspector with his survey. Let every shareholder have fair play for his money. "Death to Monopoly," and to the Chair and Committee, Good night.

Bedford Square, Tavistock, Nov. 22.

JOHN HAMBLEY.

WALKHAM UNITED MINES.

SIR,—I observed a letter in last week's *Journal*, from a shareholder in reference to these mines, which naturally complains of the loss to the shareholders of the new machinery which had been purchased and erected, and which will probably go to ruin for the want of a few hundred pounds to put the mine in a paying state. I may say that the amount required is not over stated, only the shareholders themselves seem entirely apathetic and indifferent to the loss of their property. As a creditor of the company I took steps to wind-up the company compulsorily.

Since the order for winding-up was made I have taken upon myself to employ at my own cost one of our most eminent engineers who has made a thorough inspection of the whole of the mines and machinery, and who tells me that paying work can be gone on with at once. I believe that about 1000*l.* will satisfy the whole of the debts of the company and provide something to go on with, and in return for this those that find the money will have the whole of the mines and machinery (which alone has cost far more than that amount) as it stands, and in going order, but no shareholders seem to care to come forward.

GILBERT TERRELL.

London, Nov. 22.

WEST WHEAL ROSE.

SIR,—Kindly permit me space in the *Mining Journal* for a few remarks on this mine. On reading the prospectus and reports of this company (which came into my hands accidentally) I was forcibly struck at the statements made therein. In the first place, I note that Old Shepherds and East Wheal Rose lodes are said to be passing through this set, and also that it is the centre, in which the before-named lodes must form a junction. A more incorrect statement could never be brought before the public.

Having a knowledge of this district, and from information received from one of the oldest and ablest mining authorities in the county, I unhesitatingly say that Old Shepherds lodes and West Wheal Rose are running parallel (east and west), and at least half a mile apart. It would seem strange these should form a junction. East Wheal Rose is fully a mile to the east of this property, and the lodes bearing north and south must also appear to any practical miner to be an utter impossibility that these lodes too should form a junction with West Wheal Rose lodes; I say lodes, but am informed that only one lode was ever discovered in the set.

S. R. F.

Truro, Nov. 22.

NORTH OF CORNWALL—PENTIRE GLAZE.

SIR,—I was not at all surprised to see the letter of Capt. Charles Kneebone in last week's *Journal* confirming my remarks as to the value of the mine in 1854, and I forgot to mention in my last letter that in 1851 there was sent from that mine to the International Exhibition, in London, one solid rock of ore weighing 3 cwt., and no doubt it is there now for anyone to see. I paid a visit last week where they are working in a level driven in from the beach by the former workers where no one knows, and to see the piles of silver-lead and copper broken and to take down, should say thousands of pounds; this is from the same lode that they worked on in Pentire Glaze Old Mine, north and south underlie west. I should say it is the same lode that they had in Polgeath and Portilly mines, the former worked at the same time as Pentire Glaze.

W. PAYNTER, jun.

Wadebridge, Nov. 23.

THE WADEBRIDGE DISTRICT.—Attention is drawn by Mr. T. M. Pascoe, of Rock, to the beautiful calcareo-siliceous sand found in the neighbourhood. It has, it appears, 80 per cent. of lime in it, and is found to be very useful on farms and pastures. In the same locality there is a valuable lead set, the principal owner of which is Mr. Thomas Cock. This and the mine near (Pentire Glaze) will, Mr. Pascoe thinks, with proper development and a moderate outlay yield abundance of lead.

MAGNETISM.—A concise and instructive little text-book of magnetism for the use of students preparing for examination in the elementary stage of the Science and Art Department has just been completed by Mr. THOS. P. TREGLOHAS, head master of the Science and Art Schools, Keyham—London: Longmans, Green, and Co.—and will greatly facilitate the progress of those who adopt it. The general properties of magnets, attraction of iron and steel, action of magnets on magnets, the position of equilibrium of a suspended magnet, the magnetic axis of a magnet, magnetic meridian, declination, inclination, names of poles, and the behaviour to one another of like and unlike poles are treated of in the first division, and attention is then turned to magnetic induction, careful explanations being given of the effect of a magnet on a neighbouring piece of soft iron, of the diminution of effect with increase of distance, of the comparison between the effects on hard steel and on soft iron; of the permanent magnetisation of hard steel, of the distribution of magnetism in magnets as inferred from the result of breaking them; and of the difference between the properties of different magnets depending upon their size, shape, and degree of magnetisation; whilst the third and concluding division treats of terrestrial magnetism, the details given embracing an account of the mariners' compass and dipping needle, and their behaviour at different parts of the earth, and a general explanation of the behaviour of the compass and dipping needle upon the assumption that the earth is a magnet. There is a

brief history of magnetic discovery, and a reprint of the questions in magnetism which have been set by the Science and Art Department from 1867 to 1882, which makes it a very complete guide to the subject, although the price of the book is but a few pence.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Nov. 23.—Enquiries for pig-iron are more numerous this week than last. They are not regarded as signifying an immediate wish by consumers to supply themselves, but rather as "feelers" thrown out in advance of the buying for the new year's needs, which usually takes place two or three weeks before Christmas. There was plenty of competition in hematites on 'Change to-day and yesterday. Barrow and Tredegar brands, at 70s., were in quiet sale. These brands had to meet the competition of the Pentrych hematite, for which 67s. 6d. would have been readily taken. About 67s. 6d. also would have secured an excellent brand of all-mine Staffordshire iron, but this was the minimum. Part-mine Staffordshire pigs were about 55s. to 57s. 6d., according to the mixture. Marked bar makers who refuse to accept less than the standard 87.—and they are very few—are only moderately employed, but those who will accept 77. 10s. report an increased business. Engineers and tank plates are in steady sale, and makers do not much complain. For these 87. 10s. is accepted, while for boiler sorts 91. is required. Hatton, Sons, and Co., of the Bradley Sheet and Tin-Plate Works, are putting down new plant.

The colliers have so far met with a very poor reception at the hands of the masters concerning the wages agitation, of which I spoke last week. On Monday a deputation of the men appointed at the recent Conference waited upon Mr. Fisher-Smith, the Chairman of the Coalmasters' Association, asking him to call a meeting of the trade to consider their propositions concerning the sliding-scale and the wages question. The deputation explained that they wished the masters to fix a minimum to the scale, and that that minimum should be the existing rate of wages. The second request was that on Dec. 1 a further advance of 10 per cent. in wages (which would involve a rise of 1s. per ton in furnace coal) might be given to them. To all this Mr. Smith replied that he thought it would be to the interests of the men not to require any alteration in the scale at the present time; that their request for an advance in wages was unreasonable; and that he could hold out no hope that it would be granted. He therefore did not feel justified in calling the trade together.

On Wednesday at the Walsall County Court application was made to register the resolutions in favour of liquidation passed at the recent meeting of the creditors of Messrs. John Jones and Sons, ironmasters, who lately failed for 33,000*l.* incurred liabilities. There was no opposition, and the application was granted.

Mr. Percy C. Gilchrist, co-partner of the Thomas-Gilchrist steel making process, will to-morrow (Saturday), at Dudley, read a paper before the South Staffordshire Mill and Forge Managers Association on the basic process. A large muster of members is anticipated.

REPORT FROM CORNWALL.

Nov. 23.—Our anticipation of fine—that is to say, less rainy—weather, and the consequent relief of pumping gear generally, has hardly been realised. There has been a slight improvement—the rain is not quite so constant as it was—but still there is no day without rain, and some days with enough for a week. It seems likely, therefore, that the winter will be a trying one, and that the weather will add its quota to the mining burdens which are once more beginning to be somewhat severely felt. We do not endorse the very depressing views which some of our friends seem inclined to entertain; but it is impossible to shut one's eyes to plain facts. In all probability, seeing that we are within a month of Christmas, there will be very little to note in the way of activity until 1882 continues its course; but it must be borne in mind also that if improvement is thus only depressed it will be all the more substantial when it comes.

Every effort will be made to make the Exhibition of the Mining Institute, which will be held on the 13th and 14th of next month at Redruth, a thorough success in all its branches, and we hope that advantage will also be taken of the opportunity to give the Trevithick memorial monument a greater impetus in the county on which he shed so much honour. It is gratifying to one who has done his best for years in the advocacy of Trevithick's claims to the national gratitude and respect, to find that at length there is a prospect of something being done in the way of a permanent memorial. It is too early to forecast the form with precision, but by all means let it be something of a useful character as well as generally appropriate to Trevithick's work.

Amongst the more important of the new Western railway schemes is one for extending the Liskeard and Caradon line to a junction with the authorised North Cornwall Railway. It is also to be connected with the Cornwall line by a branch from Morriswater.

Ticketing is again suggested as a remedy for the admitted grievances in the present system of selling black tin. The idea is not by any means a new one; a brief essay was made to put it into practice, but in the end nothing came of it. And so it will be again. How often has not the system of copper ticketing been attacked and condemned, and what is there about tin that would make the difference? We are not quite so bad off at present that any change must be beneficial; nor are the grievances complained of quite so unimportant that they may fitly be made the subject of merely unsettling experiments. Of course, something is gained when the need of an alteration is admitted; but it is better not to move at all than to move to no effect, and so to waste energies that might some day be usefully applied. At any rate, that is how the matter seems to us. Ticketing would not widen the market, or enable the miner more independently to enter it. Qualities of tin, too, vary within much narrower limits than copper.

Recent occurrences have brought into casual prominence once more the disputed question of mine inspection. Shall mines always be open to the inspection of the adventurers or their nominees, or shall there be special days set apart? Probably no one would feel any difficulty in solving the problem if inspections did not in any way interfere with the operations of the mine inspected. Since they do, it seems clear, however, that while the interest of the general body of shareholders is amply secured by periodical opportunities of inspection, it is not to their interest that the works should be interfered with beyond the point necessary to secure that end. There may be factories that are always open to inspection, at all hours, by all who may feel inclined to take a look through; but our experience does not lead us to believe that this number is very great. Why, then, should a mine be subjected to greater disabilities? There are quite enough facilities for speculation in mining, as distinct from investment, already.

A writer in the West Briton has called attention to the fact that the geology of Cornwall will have to a certain extent to be re-written. It is true that there does not seem to be any prospect, indeed, of an alteration of the identification of the bulk of the stratified rocks of the country as of the Devonian era, but it is becoming increasingly evident that to a very much larger portion of the area than has been commonly supposed must be assigned a far higher antiquity. The existence of Upper Silurian rocks on the southern coast has long been more or less fully recognised, and during the past few years Mr. J. H. Collins, F.G.S., traced out the evidence of a wide range of Lower Silurians resting upon still older rocks. Now Prof. Bonney has been working at the schists of the Lizard district in association with the serpentine, and he has propounded the theory that the Lizard promontory contains some of the oldest rocks in the kingdom. It is only of late years that the existence in the kingdom of a series of stratified rocks older than the Cambrian has been distinctly recognised. The enquiry has been followed up with great assiduity and success in Wales, where large breadths of pre-Cambrian rocks have been traced and mapped under the name of Archaen. Professor Bonney's investigations have led him to the conclusion that the Lizard metamorphic series, of which hornblende schist is the chief characteristic, is undoubtedly Archaen, and probably rather early in that series. There are rocks in North Wales which are almost exactly like these Cornish rocks, the Archaen character of which is undoubted, and it is also suggested that the serpentine rocks, which are clearly

intrusive, are also pre-Cambrian. Without endorsing or rejecting Prof. Bonney's views, the writer points out that very much more than the Lizard district is concerned. There is a rock in Sark very much like the Lizard hornblende schists; and recent investigations have proved the existence of igneous and metamorphic rocks of various kinds at the bottom of the Channel, stretching, presumably, mile after mile along the coasts of Cornwall and Devon. More than that, there are other metamorphic areas on the southern coast. The Bolt Head district, in Devon, consists entirely of metamorphic rocks; the Eddystone Lighthouse reef is a metamorphic rock, a true gneiss; it was recently discovered by Mr. Worth that gneissic rocks exist in Plymouth Sound. The age of rocks is one thing, and the ages of these metamorphosis is another; and all these phenomena may or may not be related. But Professor Bonney's conclusions are very suggestive, when taken in connection with these other points of extension into much wider fields.

TRADE OF THE TYNE AND WEAR.

Nov. 22.—The Coal and Coke Trades continue very firm, and there is a tendency towards increased value for every description of fuel. In the steam coal trade 10s. per ton continues to be asked for the best coals, but this price is not yet realised in many cases. There is an excellent demand for gas and coking coal, and also for manufacturing coal of all kinds, and the increased rates will be realised for most contracts made at present for future delivery. The Northumberland coalmasters are strongly in favour of continuing the present sliding scale; but at the same time they have offered to increase the rates paid to the men 2½ per cent., whether the result of the next periodical account under the sliding scale gives them that advance or not. This indicates that the masters have considerable confidence in the future; it is expected that the French and Mediterranean orders will continue over the winter. Gas coal contracts continue to be made for next year on better terms. Manufacturing coal for local use is in better demand, and in some cases a substantial advance has been got in the price. Large quantities of this coal are consumed at the chemical works on these rivers, and the chemical manufacturers have been obliged to give higher prices. The house coal trade is, on the whole, rather quiet, and prices fluctuate, but in the London market improved rates have been secured of late.

The recent stormy weather in the North Sea has retarded the shipment of coal to some extent, yet the exports at Tyne Dock during the past week have nearly reached 95,000 tons. There is a falling off of shipments of the products of this district to Spain. The reason for this we fear is that the lead business with that country is injured by the tariffs between England and Spain. A new commercial treaty between the two countries is, no doubt, urgently required. We noticed lately that in Durham the coke manufacturers were making an attempt to extract ammonia and tar from the coal in the coking process. It appears that Messrs. Pease have succeeded in effecting this to a certain extent, and they are now in the field as sellers of those products, and other manufacturers of coke are likely to follow the same course. The first cargoes from the Monkwearmouth Colliery shipped in the Wearmouth Dock, were two Scottish vessels, which were loaded on Tuesday. The cost to the Monkwearmouth Company is 10*l.* per ton, and the dock dues 1*l.* per ton. Over sea 6000 tons of coal were sent from the Wear on Tuesday to London alone. The Lambton steamers continue to take very large cargoes, and they now contribute specially to the tonnage of the seaborne coal that enters the London market. The exports of coal from the Wear are good for the time of year. The general trade of Sunderland is extremely good, and the shipbuilding and marine engine trades are better now than at any former period. Most of the shipbuilders have work which will employ them the whole of next year.

The iron trade has shown little animation this week, but still prices have been well maintained. Shipments have fallen off, and iron is not at present sent to the Baltic. There is no change in the finished iron trade. The question of restricting the make of plates, steel rails, &c., has been raised lately, but no arrangement has yet been arrived at. There is no change in the quotations for raw or finished iron of any kind. One of the most notable improvements in the iron trade is the substitution of large hot-blast stoves for those of smaller dimensions. A very large one has just been got to work at the Thornaby Ironworks, Stockton. It is 68 ft. high by 22 ft., and contains about 28,000 ft. heating surface. New stoves of similar plan have been started at Jarrow, and very satisfactory results have been obtained. These stoves give four times the heating surface, though the cost is only 30 per cent. more. One of the most interesting questions in relation to metallurgy is the obtaining of the ammonia and tar from blast-furnaces where coal is used. Experiments are now being made at Gartsherrie to test the question. It is stated that the cost of apparatus is 5000*l.*, and the profits are said to be 11,000*l.* per year for each. It is said that 30 lbs. of ammonia and 15 gallons of tar are obtained from each ton of coal consumed.

The iron shipbuilding trade continues extremely brisk, and numerous orders continue to be received. The marine engine-works are, of course, in a good position for orders also. The extensive new marine works at Wallsend will shortly be in operation. The arrangements for the amalgamation of the great ironworks of Sir William Armstrong and Co., Elswick, and the shipbuilding works of Messrs. E. Mitchell and Co., of Walker, have now been completed. The proposed capital of the new company is 2,000,000*l.*, in 20,000 shares of 100*l.* each. The existing proprietors will retain about two-thirds of this capital, and one-third will be offered to the public. Of late years Sir Wm. Armstrong and Company have contracted for the supply of war ships, all of which have been built by Messrs. Mitchell and Co., the armament being constructed at Elswick, and this has led to the union of the two concerns; and it is now intended to develop that branch of the business (the construction of vessels of war), and also continue to build merchant and all other vessels. In addition to this, steelmaking will be commenced at Elswick. The Elswick Works occupy an immense site at the west end of Newcastle, having on one side the North-Eastern Railway, and on the other side the River Tyne, on which they have a frontage one mile in length, which is accessible to large ships. The area occupied is about 68 acres. At present there are blast-furnaces at work here, and large quantities of Spanish hematite ore is imported. There are also ordnance works, and many other specialities are constructed, including bridges, hydraulic engines, &c. The Swing Bridge at Newcastle was constructed here, and it is a work worthy of the fame of the Elswick Ironworks.

The new company will commence large shipbuilding works, and also construct a slipway and graving docks suitable for the construction of war ships with their machinery and equipment. The shipbuilding works of Messrs. Mitchell are situated at Walker, five miles east of the Elswick Works. They are very extensive, and the yearly tonnage turned out has been about 23,000 tons. That there is a great future before the new company cannot for a moment be doubted. The production of pig-iron from the finest hematite ore, suitable for converting into steel by the new processes, is worthy of notice. This steel will, of course, be used for making into ship-plates, armour-plates, and guns of the largest calibre. The recent adaptation of guns for enormously increased charges of powder, was initiated by the Elswick Company in 1877, and the superiority of modern guns is so great, that extensive re-armaments may be expected, both in this and other countries, and steel is especially required for shipbuilding and for the construction of ordnance. In recent guns of the largest size made at Elswick, steel in special forms has been much more applied than previously, and in some cases the use of iron has been entirely discontinued. The board of directors of this company is a most influential one—it includes Sir William Armstrong, as Chairman; Sir James McGarel Hogg, Bart., Chairman of the Metropolitan Board of Works; Mr. C. W. Siemens, D.C.L., the inventor of the process of making steel from pig-iron and iron ore; Mr. Charles Mitchell, Mr. W. D. Cruddas, and others.

It will be recollected that at the last meeting of the members of the North of England Institute of Mining and Mechanical Engineers, a paper was read on the Channel Tunnel, and the members of the Institute were invited to visit and inspect the works. On Friday last, the secretary of the Institute, Mr. T. W. Bunning, most of the members of the council, and many other members, including Mr.

G. B. Forster, and many other prominent members, about 100 altogether, visited and inspected the works. A thorough inspection of the works, so far as they have been carried out, was made by these gentlemen, and the result of their inspection will be made known at the next meeting of the Institute, when a report will be read, which will no doubt lead to an interesting discussion on the project.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Nov. 23.—Referring again to the two fatal accidents that occurred lately in Tal-y-sarn Slate Quarry, Nantlle, it is only fair to the owner of the quarry to say that, contrary to printed instructions which are posted up about the quarry, the men who were killed were riding in wagons drawn up a chain incline instead of ascending from the bottom of the quarry by the ordinary ladder-way. The slate trade in this valley of Nantlle is good. It is said that the two great quarries, Tal-y-sarn and Dorothea are doing better than for some years past. The quarries, too, on the south-east side of the Vale, are, after many vicissitudes, attaining a successful position. This is particularly true of Fronheulog and Tyn-y-werglodd. Llwyd Coedback is also engaged in the profitable production of green slates. The North Wales colliers are now engaged in elaborating a scheme for restricting the output of coal. The details are to be settled at Leeds shortly. In any attempt like this to interfere with the business of their employers, the latter, I need hardly say, have the means of checkmating the men. Opinion is not unanimous even among the colliers, and those in council recently assembled have passed a vote of censure upon the men at half-a-dozen important collieries for not contributing to the funds of agitation. The latter are wise. Of what use is it to a man to have his wages raised 10 per cent., or 2s. per week, if he has to pay 2s. a week to a Trades Union, and work only four instead of six days a week at the behest of the agitators.

The freestone quarries in the neighbourhood of Ruabon are not busy at present. A public meeting has been held at the queer little town of Nevin, near Porthdinlleyn, in favour of the extension of the railway from Pwllheli to the latter place. The Cambrian Railway Company also seek powers to make increased transshipping accommodation at the Port of Aberdovey. Several correspondents of the *Mining Journal* have lately drawn attention to the mineral resources of the new district opened up by the Bala and Festiniog Railway; it may, therefore, not be amiss if I describe these as I know them. On leaving Bala Town the line crosses a patch of Bala limestone with the phosphate bed in it; whether the latter is in a good condition enough for working, or whether, if so, the working of it would be allowed by the owners, remains to be seen. Between Bala and Rhydyfen, in the hills to the right, several mines of manganese have at different times been opened and worked. These have always been killed with heavy land carriage upon a low-priced mineral. Perhaps the railway facilities will enable them to be worked. A couple of miles or so beyond Rhydyfen we come to the Amnodd and Nantddu Lead Mines. Here there is a good deal of lead ore in certain strata. The mistake of former workers being that they went floundering into other strata, under the common but often fallacious notion that lodes improve in depth. Around this point are numerous trials for slate in the "Lingula Flags," but so far the cleavage has been too irregular and the presence of pyrites too great for successful results.

Further on as we near Trawsfynydd we are at the north-east end of the Merionethshire range of the Cambrian rocks. The strata are of the same nature as those worked for slates in Nantlle, Llanberis, and Nant Francon, but the slate beds are thinner. Two miles on our left is a considerable opening in slates of excellent quality at Moelygwarthy, and similar openings occur at intervals all along the range southward to the Barmouth estuary. On the south-east side of the range are numerous trials on copper and lead lodes, among the matrix of the lodes being gold in quartz and copper pyrites with an appreciable quantity of gold. To the north-west, between Trawsfynydd and Harlech, are also other copper lodes, which hitherto have not proved of an extensive or productive character. In the opposite direction, and between Trawsfynydd and Festiniog, is the rather extensive flagstone quarry of Braichdu, where the flags are of large size, and a full plant of machinery is ready to dress them. There are also slate beds interstratified. It is five miles from here to the village of Festiniog, and hitherto but little has been done in the way of mining or quarrying along this stretch of country. My hope for the district is the profitable working of the Merioneth-Cambrian slate beds, and this would lead to the construction of a line along their course.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Nov. 23.—Not much damage, it appears, has been caused by the explosion at the colliery belonging to the Clay Cross Company, so that work will very shortly be resumed to the same extent as it was before the sad occurrence. The adjourned inquest was held on Wednesday and Thursday, and a good deal of evidence was taken, but none showing how the gas ignited. About 3000*l.* has been subscribed in the district, and the Lord Mayor of London has opened a fund at the Mansion House. There is no doubt that the sum required to provide for the widows and children of the deceased, which is only estimated at about 8000*l.*, will quickly be realised. Whilst the colliers are now talking about restricting the output of coal, new fields are being opened out, and it is said the Staveley Company are about to develop their recently leased field of 5000 acres. Whether the miners will attempt to stop the opening out of new coal mines remains to be seen, but as they consider they are powerful enough to dictate the quantity that shall be drawn from each colliery at present, they should certainly try what they can do with respect to new ventures on such an extensive scale as that of the Staveley Coal and Iron Company, on the ground that "prevention is better than cure." But this is a point that has not been included in the miners' programme as yet, although it is to be hoped that it will be, if only to see how it can be worked out. The coal trade is quieter than it has been, and large purchasers have evidently been holding back in the expectation that the pit prices will have to come down now that all the mines are at work. In house coal there has been a falling off in the business, doing with London, which was particularly brisk whilst there was a prospect of the men striking, but the wages demand having been conceded, there has been a marked change in consequence. Still the metropolitan districts maintain the October advance, so that inland coal is still charged as high as 24s. per ton to the cellars of the consumers. At the pits the price will be from 10s. to 10s. 6d. per ton, so that after the railway rate is deducted, as well as the other incidental charges, there is a good margin for the merchants' profits. Steam coal is in tolerably fair demand, considering the time of year, and there is a rather heavy tonnage of gas coal put on to the Midland Railway. Engine coal is in rather less demand, and prices are not so firm as they were. At the ironworks a steady business continues to be done in pig-iron for both Lancashire and Staffordshire, whilst in manufactured there has been but little change, although it is in favour of the masters more than otherwise. The foundries have been fairly well employed of late, although, as a rule, it cannot be said that they are extremely active.

Trade in Sheffield is good, and in most branches really active, more particularly in the heavier branches. At the Atlas and Cyclops Works the mills are busy in the production of the composite plates, for which heavy orders are in hand—so much so, indeed, that the men engaged on them will have plenty to do, not only during 1881, but the whole of the following year. Ship and boiler plates are also in good request, as are bars, and, indeed, all qualities of merchant iron. There has been an increased production of late of both Bessemer and crucible steel, and prices have become firmer. A large quantity of the Bessemer is required for the rail mills, which are kept in full operation. In other descriptions of railway material, including tyres, axles, wheels, and springs, a good business is being done. There is scarcely so much activity as regards some descriptions of shears and light agricultural implements; but there was a steady demand for edge-tools, files, and saws, as well as for mining tools, which are now made principally of steel. The cutlery houses are busy, and, of course, will be up to the Saturday before Christmas—

day, for there are large orders in hand that must be cleared off before that time, so that over-time has already set in at some places. Table, pen, and pocket knives of the finest, and secondary qualities as well, are in request, and there are also some foreign orders in hand for knives of a peculiar description, suitable for other than domestic purposes. Some of the foundries are doing well in heavy work for machinery, but there is not so much doing in light castings as there was in the earlier part of the year.

The Coal Trade of South Yorkshire is not so good as it was some three or four weeks ago, and colliery owners complain that, whilst wages have gone up, they are now obliged to take less prices, even for house coal, than they did during October. Steam coal is not in such good request as it was, and prices have also gone down, whilst the exports, in particular, have declined in a marked manner. Shipments to the Baltic from the Humber, as well as from other ports, are now closed for the year. Engine fuel and coke for smelting purposes has been going off well.

TRADE IN SOUTH WALES.

Nov. 23.—There is no change to report in the activity of the principal South Wales ports. The weather, however, interferes, with rapid shipments. The amount sent away from Cardiff last week to foreign ports was 104,547 tons, with 17,044 tons coastwise; Newport, 32,998 tons foreign, and 14,907 coastwise; Swansea, 17,655 tons foreign, and 8469 coastwise. There has been an important discovery of coal at Brynethin, near Bridgend. The Barrow Iron and Steel Company (of whom the Duke of Devonshire is the head) have been boring at Tynywain for some months, and on Thursday week a seam of hard coal 3 ft. thick was proved, after penetrating 18 yards of rock. Later intelligence is even more satisfactory; another seam has been entered, and the anticipations of the enterprising company appear at last to be realised. It is with unfeigned satisfaction that we make this known, as the company, which holds such vast interests in the locality, have earned the admiration of all by their indomitable perseverance and pluck in following up the vast projects which were entered upon some eight years ago.

At the meeting of the South Wales Institute of Engineers, held at the Royal Hotel, Cardiff, on Nov. 16, a paper was read by Mr. Sydney F. Walker, M.S.T.E., on "Electricity," in which he admitted that it could not very well be adapted for lighting up fiery mines at present, owing to the difficulty of the exposure of the wires and consequent breakage; if the wires were to break an electric spark might ignite the gas. He, however, affirmed that a machine for cutting coal might be worked by electricity. The use of storage batteries he condemned as too expensive a mode of storing electricity, and stated that experiments were being made at Harris's Navigation which might do away with the necessity for storage batteries; in fact, they were now using a method by which they would obviate the use of storage batteries at one-fifth of the cost. The surface work and signalling could be done by electricity, because the wires could be protected. In the course of the discussion it was incidentally mentioned that house lighting, as far as the poor man was concerned, would, in all probability continue to be done by gas, because of the great expense entailed in the construction of the necessary machinery for electric lighting.

The Nant-y-Glo and Blaenau Ironworks Company report stated that the mortgage debt of the company has been reduced during the past half-year to the extent of 5000*l.*, and that the freehold property has been increased by the purchase of the Gwain Godwin estates. The works in the district are at the present time fairly busy. The amount of iron shipped at Newport last week was 2395 tons, and 893 tons at Cardiff. Iron ore has been received at Newport from Bilbao, to the extent of 14,999 tons, and 4000 from other places. Cardiff has received 3490 tons from Bilbao, and 1515 from other places. The price is from 15*s.* 3*d.* to 15*s.* 6*d.* per ton.

The Tin-Plate Trade is again under a cloud, as prices are quoted at from 15*s.* 3*d.* to 15*s.* 6*d.* per box, entailing a loss of from 1*s.* 6*d.* to 1*s.* 9*d.* on each. It is reported that boxes are being sold in the United States for March delivery at 15*s.* The present indications point to a speedy closing of some of the works. At Gorseinon the men are giving six days' work for five days' pay. Among the latest improvements effected in this trade may be mentioned one connected with block tin. For some 30 years no improvements have been made in the mode of recovering waste tin. Like other trades some waste lies on the floors never to be again used, while some of the tin which is in a slimy state gets to the river, never to be recovered. In Australia such is not the case. Seeing the difference between the price of English and Straits tin every little will prove a help in competing with foreign countries, and, therefore, the tin waste is an important question. It would appear that the yield from the ore is about 20 per cent. of clean tin, and that there is still 70 per cent. in a rough state requiring further reduction. It is thought best that it should be buddled a second time, that all the clean tin should be taken out, and the remainder passed into a pulveriser at once. In Australia the tin is entirely dressed by jiggling with short rapid strokes. There this system answers well, and is cheaper and more effective than any other mode of dealing with the ore.

At a meeting of the Board of Examiners for the South Wales Mining District (Mines Act, 1872), held at Cardiff, on Monday, present Mr. G. T. Clark, Downais, in the chair, and Messrs. W. Adams, C.E., Cardiff, Evan Daniel, C.E., Swansea, George Tasker, Merthyr Tydfil, Thomas Phillips, Aberdare, Rees Evans, Swansea Valley, and the secretary, C. Henry James, Merthyr Tydfil, it was resolved that the next examination for the granting of certificates of competency, under the Mines Act, 1872, be held at Cardiff on Jan. 23, 24, and 25, 1883.

THE MINERAL RESOURCES OF IRELAND—No. V.

BY THOMAS TONKIN, M.E.

The Killaloe Slate Quarries are the most extensive in Ireland, the quality of the slate is very superior, and the cleavage so perfect that slabs 10 ft. square are obtainable. The owners of these quarries enjoy a large export and home trade, and the extent of slate country is about 20 square miles. It is needless to dwell on advantages such as these, practically inexhaustible quantities of first-rate slate near to railway and shipping port. The limestone formations in the County Clare have long been known to contain large lodes of calc spar, in which have been found bunches and deposits of lead ore, and mines were worked at Miltown and Ballyhickey. In recent times, however, I am not aware of any kind of mining operations going on there; notwithstanding this it is quite evident that the few paltry pits sunk half a century ago have by no means given the lodes a fair trial.

Passing north-west to the shores of Loch Corrib, near the town of Galway, a district of considerable importance presents itself. Extensive quarries of black marble have been worked for generations along the verge of the lake, and formerly large quantities were shipped to America and England. Galway is also rich in white marble of great purity. The white marble is obtained from the primitive limestone, and the black marble is in the upper limestone. There is scarcely any limit to the quantity of marble that may be obtained. Ah! Well may we blush on this side of the Channel to see Ireland teeming with undeveloped riches, while we squander our substance in the most remote regions of the globe. Near Outard veins of calc spar are seen in the lime formation containing lead ore, and a mine was opened there by a Scotch company in 1872, but to what extent the operations were pushed, and with what measure of success I have not learned; this district, however, which embraces the surroundings of Loch Corrib, presents features of an encouraging nature. Lead ore has also been met with in several places in the granite and mica slate rocks in Connemara, which may be regarded as the same district, though differing from the immediate vicinity of Outard with regard to geological position. Veins containing lead ore are also seen in the mica slate and granite rocks in Donegal, on which, however, no mines are opened.

The Connought coal field, of which Lough Allen (an expansion of the Shannon) is the centre, occupies portions of the counties of Sligo, Leitrim, and Roscommon; its extent is 16 miles square. This coal district has a wild and gloomy appearance, and consists of a series

of hills surrounding the lake, the highest of which has an elevation of about 1000 ft. The tops of these mountains are flat, and covered with peat to a considerable depth, and the sides are thickly heather clad. Three coal seams have been discovered within the area above named, one of which, the Three-foot seam, is capable of producing from its great area large quantities of coal of superior quality for house and manufacturing purposes; it is not anthracite coal, but a good free-burning bituminous coal. One of the other seams produces a more inferior description than is usually found marketable, but is well adapted for lime-burning, calcination, &c. The coal seats are composed of first-class fire-clay, and the alternating beds of sandstone and shale are very regularly disposed; the sandstone is capable of producing almost any conceivable quantity of building material, and coarse and very strong flags.

The most important feature about this coal formation seems to be the abundance of clay ironstone that is found to occupy the strata at the foot of the mountains. The shale containing the beds of ironstone is about 100 fathoms in thickness, and occupies the lower portion of the coal formation. In the River Arigna, which flows through a portion of the coal field, a fine bed of iron is seen 3 ft. in thickness, and several others are observable in the declivity of the hills, varying from 2 to 3 ft. in thickness. The existence of coal and iron under such favourable conditions gave rise to the construction of furnaces on the banks of the Arigna river about a century ago, at which time, and more recently, the inland situation, and without railway or other cheap means of communication, together with the more expensive methods of iron manufacture which were then adopted, must have prevented the establishment of a permanent industry there, not that there is any lack of material. Coal, ironstone, and fluxing material (limestone) are there in profusion, and two or more furnaces may be kept in constant operation for centuries to come. The ironstone is equal in quality to the best of its class—40 per cent. metallic iron—and now that a railway skirts the coal field, and modern science has revolutionised the manufacture of iron, &c., I am of opinion that a splendid business may be established at this place. My object is to point out the localities in which capital may be expended to advantage without entering into anything approaching detail, therefore my remarks are but a mere outline of what may be written respecting the undeveloped mineral and other industrial resources of the country. Railway communication has done much to make available what otherwise could not be turned to profitable account, and it is needless to add that a much more extensive railway system for Ireland would still more tend to promote the welfare of that section of the kingdom. Agricultural, as well as mineral and other interests, would all benefit by the extension of railways and construction of roads. The sand and seaweed of the coast could be readily and cheaply transported inland for manure. Lime and artificial manures could also be cheaply conveyed to districts which are now in isolation, and with regard to mineral interests the lists of advantages may be named legion.

The Shannon, the largest river in the kingdom, rises near Lough Allen, in the Connought coal formation, and flows through the Munster coal fields, and being navigable almost to its source affords a cheap and ready means of transit in the direction in which it flows. The country along its banks is flat and generally fertile, and sportsmen may find some splendid occupation, as game abounds there, and the fish in the river for number and quality cannot be surpassed. In Leitrim, on the east bank of the Shannon, occur extensive beds of ferruginous clay, well adapted for the manufacture of bricks, tiles, sanitary pipes, &c., and as rail and river are both available for transporting the manufactured articles, and in every direction a market may be found for such articles of utility as these, a tiliary world most certainly flourish at such a point of advantage as this. Red and yellow ochre is also seen in this locality, but not sufficiently pure for commercial purposes without undergoing some process of refinement, which may, however, be found too expensive to pay. Hematite iron ore is also supposed to be contained in a band of slate rock in this neighbourhood; but on trial being made no ore of value was discovered, though veins of calc spar with spots of copper ore were met with. Emigration is no remedy for the ills of Ireland, inasmuch as the flower of the people are the first to leave, while the old and infirm remain at home, and tend to impoverish the country still more; besides, from whence comes a large proportion of the good men of our army and navy? To my mind a wise Government would discourage emigration if the large, rich, and varied resources of the country were only half developed properly would abound, and contentment, as a natural consequence, ensue, and a vastly larger population be provided with remunerative employment. May not a Government Board of Works be established, having its engineering and agricultural departments who would construct railways, roads, canals, docks, &c., also drain and reclaim waste land. Better execute works of national utility and improvement of the country than suffer some of the best blood of the nation to depart and leave in desolation their native soil.

FENN ON THE FUNDS.

To criticise the thirteenth edition of a book is usually anything but a satisfactory task, since to repeat the same terms of praise or condemnation is useless, and to attempt to express the same opinion in different language is equally so; but fortunately the new edition—that of 1883—of "Fenn on the Funds," as it is familiarly called—"Fenn's Compendium on the English and Foreign Funds, Debts, and Revenues of all Nations. Thirteenth Edition. Entirely re-written and brought down to the latest date. By Robert Lucas Nash. London: Effingham Wilson, Royal Exchange"—presents no serious difficulties of this kind, inasmuch as, although the arrangement and character of the work which secured it its high reputation has been carefully preserved, it has been so entirely re-written that it is practically a new work; whilst with regard to the lateness and reliability of the particulars it need only be said that in the case, for example, of the details given as to the area and population of British India, and the estimate for the native States and the French and Portuguese possessions, not only have the corrections been made by the officials at the India Office, but figures from the final report of the census of February, 1881, are included, and those from the latest French and Portuguese returns have been furnished. In the numerous other instances Mr. Nash appears to have taken equal care that all the information given shall be acceptable with equal confidence.

Referring to the rapidly increasing complexity of modern finance, Mr. Nash remarks that it is not only that in the short space of 20 years the Government debts of the world have increased from 2,600,000,000*l.* to 5,400,000,000*l.*, but the character of those debts has greatly altered. The great masses of these debts, 20 years ago, were "internal," and had been incurred in prosecuting wars and in covering revenue deficits. It followed that each sovereign, or its equivalent, paid to the national creditor had to be raised by taxation, or, in default, by fresh borrowing. But, comparatively modern as the entire system of national indebtedness is, the system of raising public loans in a foreign country is still more modern, and the most recent innovation of all has been the "Loan for Reproductive Purposes." Under this latest invention some States are now found to be bearing easily an amount of apparent burdens which, 20 years ago, would have been simply overwhelming. Hence it is that a faithful record of national indebtedness in 1882 involves the distinction between debts which are wholly, partially, or imperceptibly burdensome, and there are even some instances where the accumulated assets of the State clearly exceeded its liabilities. All these matters are taken into consideration in the work now referred to in a comprehensive enquiry into the liabilities of nations. But probably the most important feature in "Fenn on the Funds," from a pecuniary point of view, is the giving of information to enable the capitalist to determine the relative security of investments, for it must be borne in mind that the innumerable disappointments which capitalists experience arises, not from the impracticability of obtaining the necessary knowledge, but from their own neglect to seek it. By the study of "Fenn on the Funds" they may become thorough masters of the subject, so far as to be able to determine the amount of risk incurred for a given percentage offered, so that they can please

themselves as to whether the risk is worth undertaking. The mass of facts given is enormous, and they are of so valuable a character that no one dealing or interested in the securities referred to could afford to be without Mr. Nash's volume.

INDICATING FIRE-DAMP IN MINES.

For automatically indicating the presence of fire-damp in mines, and of giving notice thereof at any required place, an improved arrangement has been patented by Mr. ISIDOR KIRSEE, of Cincinnati, who explains that by the use of the ordinary portable safety-lamp the presence of fire-damp is indicated by the flame which arises within the surrounding wire gauze. When the volume of fire-damp equals one-sixth to one-fifth the volume of the atmosphere combustion ensues, and a flame arises within the space enclosed by the wire gauze, which flame increases in volume and intensity as the fire-damp increases, thus giving to the miner carrying the lamp, or other person seeing the flame, notification of the existence of undue and dangerous quantities of fire-damp in the mine. But this condition may exist in a part of the mine not being worked, and where no one is present; and it may, moreover, be desirable not to depend solely upon the workman who carries a portable lamp to notify the superintendent or other officer of the presence of fire-damp in a dangerous volume.

As the principle involved in the invention lies in the utilisation of the fire-damp itself to make its presence in dangerous proportions in any part of a mine known at any one point, or at different points inside or outside of a mine, by the ignition of the fire-damp within a receptacle from which the flame cannot be communicated to the surrounding atmosphere, and whereby a normally closed electric circuit is interrupted or a normally interrupted electric circuit is closed to give the proper signal, it is explained, firstly, that the inventor does not confine himself to any particular construction of receptacle, as the diffusion of light is not necessary to the good operation of the invention, which may therefore be applied to a light diffusing medium or simply to a receptacle to which the fire-damp may have access, and within which it may be ignited whenever the combination of the fire-damp with the atmospheric air is such as to admit of ignition, or combustion of the two gases. Whatever means may be employed, it is, however, necessary that the combustion of the fire-damp should be confined to the receptacle. Of course, it will be more convenient as well as more economical to apply the invention to a light diffusing medium, and in view of this he has generally restricted the description of the application of the invention to lamps of the Davy class. Secondly, he does not limit himself to any specific means whereby an electric circuit may be closed or broken by the action of the heat or ignition or combustion of fire-damp within the lamp or other apparatus, nor to any specific devices, or mechanism through the medium of which a signal, whether visible or audible and of whatsoever nature, may be given by such closing or breaking of the circuit. And, thirdly, he does not confine himself to the application of the invention to single lamps or other apparatus, as a series of such may be placed in the same electric circuit, and the precise part of the mine where fire-damp is present in dangerous proportions may be indicated at a station or point inside or outside of the mine and at any distance from the point affected. It will be interesting to know how the invention works in practice.

THE NEW J. B. ROGERS DYNAMO.—According to a further improvement of Mr. J. B. ROGERS, of Holborn Viaduct, he mounts upon a spindle or shaft one or more series of helices or coils, and revolves them as one body on one or on both sides of a fixed electro ring, or armature or its equivalent. The rings or armatures may be full circles with indentations for an insulating medium to be fitted in, or they may be composed of half rings or segments, with an insulating body between the meeting ends or edges for the necessary continuous or alternate current, as the ring may be connected. The helices or coils may be arranged in single or in double circles in or between supporting or connecting plates, or otherwise arranged to rotate around the face or faces of the fixed ring. By this invention he concentrates the current as generated into the centre of a large magnetic field, from which the fluid can be taken direct by conducting wires to lamps for lighting purposes or otherwise. He obtains an increased quantity of electric fluid within a given area, and of a more highly concentrated nature, with less tendency to escape than by the present construction of dynamo machine in which the rings revolve, and the coils or helices are fixtures.

SAVING LIFE IN COLLIERIES.—With a view to reduce the fatality of colliery explosions, by providing the miners who have escaped violent injury but are in danger of asphyxiation with a supply of fresh air, Mr. D. R. JONES, of Carmarthen, proposes to construct metallic receptacles, fill them with compressed air, and place them in convenient parts of the workings, so as to be within easy reach of the miners, each receptacle being provided with one or more valves or stop-cocks, and one or more flexible pipes. He prefers to use an intermediate receiver in combination with every metallic receptacle, said receiver consisting of an expandible bag of indiarubber provided with a stop-cock for the admission of compressed air from the main receptacle, while the flexible pipe terminates in a mouth-piece which the miner can apply to his mouth. The expandible bag may be spherical or lenticular in shape, and has the effect of reducing the pressure of the air before it enters the mouth. There may be one air receptacle for every miner, in which case it may be carried on their back, or one for every group of miners. As soon as the atmosphere of a mine becomes poisonous by an abundance of pit-gas, the miner may sustain his life by applying the mouth-piece to his mouth, opening the stop-cock, and breathing air from the receptacle. The chief novelty of the invention, as compared with those of Galibert and others which have been in occasional use for the last 20 years, appears to be the use of two receptacles instead of one. The great importance in all apparatus of this kind is to have them ready for immediate use and in working order when wanted. It would, therefore, be interesting for Mr. JONES to state how long the compressed air maintains its maximum pressure in his cylinders—there is usually a continuous leakage which cannot be prevented—and how he proposes to keep up the pressure, or know that it is kept up.

PROGRESS OF SMOKE ABATEMENT.—At a meeting of the Smoke Abatement Committee, held on Saturday, at the offices, Berners-street, under the presidency of Mr. Ernest Hart, it was announced that the Board of Trade had finally approved of the formation of a Smoke Abatement Institute and of the Articles of Association, and that the Duke of Westminster, the Duke of Northumberland, and the Duke of Sutherland, had accepted the offices of vice-presidents, and Mr. Ernest Hart the office of president of council. Communications were read from the Foreign Office, enclosing official documents communicated to the Senate of the United States by the President of the United States, containing a detailed and important report which Dr. Hopkinson, F.R.S., had made on the Smoke Abatement Exhibition at South Kensington for the information of the American Government, as directed by the American Minister upon cablegram instructions from the American Government. Official communications were also read from New Zealand, the Dominion of Canada, and Chicago, conveying information as to the steps taken in those countries on the impulse given to the question by the action of the Smoke Abatement Committee, and requesting information as to the appliances and legislative measures which was ordered to be furnished. It was announced that the volume containing the reports of the jurors, with detailed tabulations of tests, forming a work of important character and permanent value, with a considerable body of illustrations, was now in the press, and was being published by Messrs. Smith, Elder, and Co. Mr. T. W. Cutler, F.R.I.B.A., and Mr. J. Lowry Whittle were appointed a sub-committee to report on the question of the formation of a museum and permanent exhibition of smoke-abating kitcheners, grates, and industrial appliances for public use and information. Mr. Kegan Paul (hon. treasurer) presented the audited accounts, which were audited by

Messrs. Turquand, Young and Co., and were ordered to be printed and circulated. It was announced that upwards of 2000 had been subscribed towards the funds of the new Smoke Abatement Institute. A resolution was laid on the table which had been adopted by the Corporation of the City of London, who had appointed a committee to study the question of smoke abatement in London, and to consider the defects of present legislation and the advisability of taking more urgent measures for the abatement of smoke. Arrangements were reported of meetings to be held at Higher Broughton and in the pottery district with the like object. Other business of an important nature was transacted, and the meeting was adjourned.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. J. H. REYNOLDS, stock and sharebroker, Redruth (Nov. 23), writes:—During the week business has been rather slack, but prices for Dolcoaths and East Pools remain much the same. West Setons on an improvement advanced to 24, but close weaker at 21½. At the meeting to-day no call was required. At Pedn-an-drea meeting yesterday a call of 9s. per share was made. No alteration in the tin standards. Subjoined are the closing quotations:—Blue Hills, 1 to 1½; Carn Brea, 9 to 9½; Cook's Kitchen, 35 to 36; Dolcoath, 72 to 73½; East Pool, 50½ to 51½; East Blue Hills, 9s. to 11s.; Gunnislake (Clitters), 3½ to 3¾; Killfret, 3½ to 3¾; Mellanear, 4½ to 4¾; New Cook's Kitchen, 6½ to 7; New Kitty, 2½ to 2¾; North Bury, ½ to ¾; Pedn-an-drea, 2½ to 2¾; Phoenix, 2½ to 2¾; South Condurow, 9 to 9½; South Crofty, 11 to 12; South Frances, 9½ to 9¾; South Tolarne, 4½ to 5; Tincroft, 7 to 7½; Tregembo, 3 to 3½; West Basset, 7 to 7½; West Frances, 10 to 11; West Kitty, 13½ to 13¾; West Peavor, 9½ to 10; West Polbrene, ¾ to 1; West Pollice, 2 to 2½; West Tolarne, 10 to 11; West Seton, 21 to 22; Wheal Agor, 16½ to 17½; Wheal Basset, 9 to 10; Wheal Grenville, 8½ to 9; Wheal Hony and Trelawny, 2½ to 2¾; Wheal Jane, ¾ to 1; Wheal Kitty, (St. Agnes), 1½ to 2; Wheal Peavor, 4½ to 5; Wheal Prussia, 1 to 1½; Wheal Uny, 4½ to 5; Penhalls, 1 to 1½.

—Mr. S. J. DAVEY, mine share dealer, Redruth (Nov. 23), writes:—We have had a very quiet market again this week. Wheal Peavors have risen 20s., but Carn Brea have fallen ½; Cook's Kitchen, 1; East Pool, 1½; Killfret, ¾; Tincroft, 1; West Kitty, ¾; West Seton, 2; and Wheal Grenville, ¾. At Pedn-an-drea meeting yesterday a 9s. call was made, shares have fallen ½ to 2½. To-day prices are steady but there is very little business doing. Subjoined are the closing prices:—Blue Hills, 1 to 1½; Carn Brea, 9 to 9½; Cook's Kitchen, 35 to 37; Dolcoath, 72 to 73½; East Blue Hills, 9½ to 11½; East Pool, 50½ to 51½; Killfret, 3½ to 3¾; Mellanear, 4 to 4½; New Cook's Kitchen, 6½ to 7; New Kitty, 2½ to 2¾; Penhalls, ¾ to 1; Pedn-an-drea, 2 to 2½; Phoenix, 2 to 2½; South Condurow, 9½ to 9¾; South Crofty, 11½ to 11¾; South Tolarne, 4½ to 5; Wheal Agor, 17 to 17½; Wheal Basset, 8½ to 9; Wheal Grenville, 8½ to 9; Wheal Peavor, 4½ to 5; Wheal Prussia, 1 to 1½; Wheal Uny, 4½ to 5.

—Messrs. ANNOTT and WICKETT, stock and share brokers, Redruth (Nov. 23), write:—Business in shares during the past week has been very much restricted, and prices show but little variation. Subjoined are the closing quotations:—Blue Hills, 1 to 1½; Carn Brea, 9 to 9½; Cook's Kitchen, 35 to 37; Dolcoath, 72 to 73½; East Pool, 50½ to 51½; East Blue Hills, 9½ to 11½; Gunnislake (Clitters), 3½ to 3¾; Killfret, 3½ to 3¾; Mellanear, 4 to 4½; New Cook's Kitchen, 6½ to 7; New Kitty, 2½ to 2¾; North Bury, ½ to ¾; Pedn-an-drea, 2½ to 2¾; Phoenix, 2½ to 2¾; South Condurow, 9 to 9½; South Crofty, 11 to 12; South Frances, 9½ to 9¾; South Tolarne, 4½ to 5; Tincroft, 7 to 7½; Tregembo, 3 to 3½; West Basset, 7 to 7½; West Frances, 10 to 11; West Kitty, 13½ to 13¾; West Peavor, 9½ to 10; West Polbrene, ¾ to 1; West Pollice, 2 to 2½; West Tolarne, 10 to 11; West Seton, 21 to 22; Wheal Agor, 16½ to 17½; Wheal Basset, 9 to 10; Wheal Grenville, 8½ to 9; Wheal Hony and Trelawny, 2½ to 2¾; Wheal Jane, ¾ to 1; Wheal Kitty, 1½ to 2; Wheal Peavor, 4½ to 5; Wheal Prussia, 1 to 1½; Wheal Uny, 4½ to 5.

—Mr. M. W. BAYDEN, Liskeard (Nov. 23), writes:—The mining market has been dull throughout the week. Very little business has been transacted, and in the case of several mines, in which there has been a little pressure to realise. Quotations have further declined. Closing quotations are annexed:—Carn Brea, 9 to 9½; Cook's Kitchen, 35 to 36; Dolcoath, 72 to 73½; East Pool, 50½ to 51½; Killfret, 3½ to 3¾; New Cook's Kitchen, 6½ to 7; New Kitty, 2½ to 2¾; Penhalls, ¾ to 1; Pedn-an-drea, 2½ to 2¾; Phoenix, 2½ to 2¾; South Condurow, 9 to 9½; South Crofty, 11 to 12; South Frances, 9½ to 9¾; South Tolarne, 4½ to 5; Tincroft, 7 to 7½; Tregembo, 3 to 3½; West Basset, 7 to 7½; West Frances, 10 to 11; West Kitty, 13½ to 13¾; West Peavor, 9½ to 10; West Polbrene, ¾ to 1; West Pollice, 2 to 2½; West Tolarne, 10 to 11; West Seton, 21 to 22; Wheal Agor, 17 to 17½; Wheal Basset, 8½ to 9; Wheal Grenville, 8½ to 9; Wheal Peavor, 4½ to 5; Wheal Prussia, 1 to 1½; Wheal Uny, 4½ to 5.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, share brokers, Queen's Chambers, Market-street (Nov. 23), write:—The past week has been characterised by severe movements; and as regards speculative stocks an almost general, and in many cases very heavy, fall in prices. Whilst the causes have been found in the state of other markets, the home market has shown weakness; but the extent to which quotations have been altered has been undoubtedly sympathetic. Paris and New York advances have been very depressing. The former, however, have latterly recorded some steadiness, but the latter have been a succession of tumbles, and prices to-day are very little above the worst. The cause of the collapse of prices is rumoured impending war of rates and the great depression in the iron and coal industries in the States, but the outlook must be very gloomy on the other side if it warrants such sudden and complete drop as has recently been recorded. Under these influences it would be matter for surprise if the home stocks had not suffered in value; as it is, though as a rule they are lower, they may, under the circumstances, be said to have stood their ground very satisfactorily. In the miscellaneous classes figures taken, as a whole, are very well maintained; only in coal, iron, and mining, &c., is there any approach to general decline; the other descriptions show great majority of better quotations. The number of transactions recorded herein is fairly large, but the bulk of the business has been found in one or two concerns in which much activity has been displayed.

BANKS have gone very strong, and not a few dealings are marked at in most instances full rates. There is no single instance of adverse change, whilst the alterations for the better are numerous. Bank of Liverpool has shown some activity, and was up to 31½ to 34½, since then, however, they have settled back, and now at 31½ to 32½, a rise of 1½ to 1¾ in the week. The following are also higher:—Lancashire and Yorkshire, ½; Manchester and Liverpool District, ½; Manchester and County, ½ to ½; Consolidated, ½; Liverpool Commercial, ½; Manchester and Salford, ½; and Union of Manchester, ½.

INSURANCE shares, though still producing little or no business, exhibit a marked turn for the better in quotations, only two instances of decline having to be reported, and one of these hardly worth naming, whilst numerous instances of enhanced figures are to be noted:—Maritime, ½; Ocean Marine, ½; Thames and Mersey Marine, ½ to ¾; Liverpool and London and Globe, ½; Lancashire and Yorkshire Accident, ½ to ¾; British and Foreign Marine, ½; Royal (Liverpool), ½; and Manchester Fire, ½ to ¾; higher; whilst Lancashire and ½ and Sea, ½ lower.

COAL, IRON, &c., AND MINING.—Small business passing, and tone dull. The changes in quotations show unfavourable majority. Nant-y-Glo and Blaenau Preferred are foremost in the favourable movements, and Tharist, Sharp, Stewart, and Great Laxey on the other side. Higher: Nant-y-Glo and Blaenau Preferred, 2 to 3; Palmer's Shipbuilding, ½; John Brown, ½; and Indian Phoenix Gold, ½. Lower: Tharist, Sulphur, and Copper, 2½; Sharp Stewart, 2; Great Laxey, ½ to 1½; Bolekows (fully paid), ¾ to ¾; Indian Glenrock Gold, ¾; West Cumberland, ¾ to ¾; Bilbao Iron Ore, ¾; Rio Tinto, ¾; Indian Trevelyan, ½; Ebbw Vale, ½; Bolekow (12s. paid), ¾; Pelsall Coal, &c., ¾; and Canadian Copper, &c., 1s. 3d.

COTTON SPINNING.—Shares present no changed features of interest. Dealings are very restricted, but figures are fairly well maintained. **TELEGRAPHIC.**—Atlantic descriptions are dull and lower, as also are Western and Brazil, though the depreciation is not severe. Globe pref. area share better. Telephones have had a spurt during the week; but have come back again. Lancashire and Cheshire, after making a rise of about 4s., are now only 6d. better on the week. Uniteds have been ½, but now are only ¼ higher. **CANALS** unchanged. **CORPORATION STOCKS,** &c., quiet and without alteration, save an advance of ¼ on buyers' figure for Manchester Stock. **MISCELLANEOUS:** Hudson's Bay have been very active, and after many fluctuations show a gain of ½ to 1; Gas Light and Coke, A. ordinary, further risen, but London General Omnibus show a sharp fall.

RAILWAYS.—Since our last report we have had to contend against bad weather and an unsettled state of the Paris and New York markets. This being too great a strain, has caused all prices to relapse, and for the moment the outlook is gloomy. The fall in prices ranges from ½ to 2, the heavy lines bearing the brunt of the decline. Several circulars have been issued against Canadians, and the pressure, coupled with the unfavourable movements in other markets, has depressed them, causing a reduction of 1 to 1½ in Grand Trunk issues, and ¾ in Great Western. The American market has collapsed heavily, arising from the highness of money there. We, however, must have a reaction from these points, as their harvest must favourably impress traffic and result in a gain. Quiet buying and putting away for a time will work best.

IRISH MINING AND MISCELLANEOUS COMPANIES SHARE MARKET.

CORK.—Messrs. J. H. Carroll and Sons, stock and share brokers, South Mall (Nov. 24) write:—Markets were a little firmer to-day,

though business was limited. Great Southern and Westerns were bought at 116, Limericks were done at 28, and Wicklows at 74. No change in Bandons. Bank of Ireland stock changed hands at 323, Nationals were steady at 24, Hibernians were dealt in at 33½, and Munsters unchanged at 7. Cork Gas shares are 6½ to 6¾, Cork Packets shares are 10½, Breweries, 5½ to 5¾, and Levys are 5½ to 5¾.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, sharebroker and ironbroker, (Nov. 23), writes:—During the past week markets have been depressed, owing to the closing of speculative accounts. The fall has now, however, been so heavy that a recovery has been brought about by purchasers to cover previous speculative sales, and should anything favourable transpire there is no doubt investors would do well to take advantage of the present low range of prices. The reports of trade continue favourable, and though the open market's rates of money are now approximating to the Bank of England's minimum, they are still quite moderate.

In shares of coal, iron, and steel companies prices are generally lower, but Nant-y-Glo and Blaenau deferred have advanced 2½. In the Scotch pig iron market prices of warrants declined from 50s. 3d. to 48s. 10½, owing to speculative realisations and the quiet state of the market generally, but the tendency is now towards recovery. Chillington Iron are at 45s. to 50s.; Chapel House, 10s. to 15s.; Llylly and Tendu (pref.), fully paid, 4 to 5; New Sharnston, pref., 5 to 5½.

In shares of copper concerns the principal dealings have been in Tharist, which show a heavy decline from 41½ to 37½, but they have since recovered to 39. Bratberg are at 35s. to 40s.; Huntington, 7s. 6d. to 10s.; Mason and Barry, 15½ to 16½; Santa Cruz, 2s. to 3s.; Soubac and Catr Alan, 15s. to 17s. 6d.; Sentein, 18s. 9d.

In shares of home mines there has been less business doing, but prices are generally steady. Pen-y-Orsedd have advanced. Bodidris are at 1s. to 3s.; Carn Cambrone, 12s. 6d. to 17s. 6d.; Drakewalls, 7s. 6d. to 12s. 6d.; Devon Friend-ship, 5s. to 7s.; East Graven Moor, 5s. to 10s.; Devon Consols, 22s. 6d. to 27s. 6d.; East Blue Hills, 9s. to 11s.; East Roman Gravel, 4s. to 5s.; East Lovell, 20s. to 25s.; East Oliverton, 10s.; East Caradon, 30s. to 35s.; East Wheal Rose, 21s. 3d. to 23s. 7d.; Great Polgoth United, 4s. to 6s.; Goginan, 15s. to 25s.; Great West Chiverton, 2s. 6d.; Gunnislake (Clitters), 67s. 6d. to 72s. 6d.; Gobbett, 22s. 6d.; Great Wheal Worthy, 10s. to 15s.; Herodsfoot, 2s. 6d. to 3s. 6d.; Indian Queen, 5s. to 10s.; Mounts Bay, 18s. 9d. to 21s. 3d.; North Herodsfoot, 3s. 6d. to 12s. 6d.; Pioneer, 5s.; Pely Wood, 3s.; Sorridge, 4s. to 6s.; St. Just United, 5s. to 10s.; Tanar, 15s. to 20s.; Tin Hills, 7s. 6d.; United Shepherds, 20s. to 25s.; Walkham United, 2s. to 4s.; West Wheal Peavor, 9 to 10; Wheal George, 10s. to 20s.; Wheal Jane, 15s. to 20s.; Wheal Kitty, 35s. to 40s.; Wheal Hony, 50s. to 55s.; and Wheal Lusk, 1s. to 3s.

In shares of gold and silver mines the principal feature has been a decline in Richmond to 7½, other shares also lower. Akankos are 10s. to 12s.; California, 17s. 6d. to 20s.; Chontales, 1s. 3d. to 3s. 9d.; Central Wynad, 7s. 6d. to 12s. 6d.; Columbia Hydraulic, 6s. to 8s.; Eureka Nevada, 5s. to 7s. 6d.; Frontinos, 47s. to 52s.; Guinea Gold Coast, 15s. to 20s.; Indian Kingdoms, 2s. to 4s.; Indian Consolidated, 7s. 6d. to 10s.; Indian Glenrock, 13s. 9d. to 16s. 3d.; Kinkorinos, 23s. 9d. to 25s.; Kyanage, 15s. to 17s. 6d.; La Plata, 38s. 9d. to 41s. 3d.; New Callao, 6s. to 8s.; New Gold Run, 6s. 6d. to 10s.; Silver Peak, 2s. to 3s.; Rio Grande do Sul "A," 20s. to 22s.; "B," 10s. to 15s.; Simons Reef, 1s. to 3s.

In shares of oil and miscellaneous companies prices are generally easier; Muldothan Oil are about 7½; Lawes' Chemical, 6½ to 6¾; Noble's Explosives, 30½.

EDINBURGH.—Messrs. THOMAS MILLER and SONS, stock and share brokers, Princes-street (Nov. 22), write:—The market for most stocks has been very heavy during the past week, in sympathy with prices from New York and Paris, and the amount of business done has been limited. Caledonian Railway stock has receded from 111½ to 109½; North British from 102 to 100½; Glasgow and South Western from 113½ to 112½; Highland from 95½ to 97; Great North of Scotland from 59½ to 56½; Great Western from 147½ to 146; London and North Western from 172½ to 170½; North Eastern from 176½ to 173½; and Brighton Deferreds from 110½ to 110. Canadians have been very weak. Grand Trunk Ordinary has receded from 29½ to 28½; the Third Preference from 62½ to 61½; Great Western of Canada shares from 16½ to 15½. In Americans the fall has been especially severe. New York, Pennsylvania, and Ohio First Bonds have declined from 51½ to 48; Erie shares from 40½ to 35½; Ontario from 23½ to 22½; Oregon Preference from 52½ to 48½; Philadelphia and Reading from 29½ to 28. At the close to-day a somewhat more cheerful tone was perceptible. In banks, Bank of Scotland has risen from 312 to 313; Commercial from 54½ to 56; National from 309 to 310; Union has receded from 24½ to 24; Clydesdale from 24½ to 24; Caledonian Insurance shares have risen from 75 to 77; Life Association from 24 to 24½; North British and Mercantile have declined from 31 to 30½. In mines, Tharist has declined from 40½ to 39½; Shots Iron from 49 to 47½; Cairnstable Coal from 5 to 4½; Mason and Barry from 16½ to 16; Canadian Copper from 20s. 6d. to 19s. 6d.; Burntland Oil have fallen from 14 to 13½; Muldothan from 7½ to 7; Uphall from 10 to 9½; Young's Paraffin from 13½ to 12½.

COLORADO MINING AGENCY.—For some time past the reliability of the New York Mining Record has been acknowledged throughout the United States, and in consequence of the constantly increasing attention now being given to mines in the Western States, it has been found desirable to appoint a general representative in that district. Mr. Frederic F. Chiselm, whose business card appears in another column, has been appointed general Western agent, and desires it stated that he makes a speciality of attending to any business connected with mines and mining in Colorado, New Mexico, Arizona, or Mexico, and can furnish as reference any banking house in Colorado.

ST. JUST UNITED.—At the meeting held on the mine, on Tuesday, the accounts showed a profit on the four months' working of 171s. 1s. 1d., reducing the adverse balance to 1217s. 17s.

Meetings of Public Companies.

LONDON AND CALIFORNIA MINING COMPANY.

An extraordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Thursday,

Mr. CHARLES WRIGHT in the chair.

Mr. JOHN SAUL (the secretary) read the notice convening the meeting, which stated that it was called for the purpose of laying before the shareholders a petition which had been presented by shareholders for winding up the company, and of taking their instructions thereon.

The CHAIRMAN said it was the painful duty of the directors to submit for the consideration of the shareholders whether the time had not arrived for winding-up the company. Messrs. McCalmont Brothers and Co., the holders of 45,000 shares, for which they paid 90,000, in cash, had come to the conclusion that the life of the company could no longer be protracted with any good result, and they had taken upon themselves the duty—as the holders of fully one-third of the capital of the company—of initiating the proceedings for winding-up referred to in the notice convening the meeting. It was only fair to the Messrs. McCalmont to state that, although they did not communicate with the directors before taking the steps they did, they were advised by their solicitor, for reasons which that gentleman would explain, not to acquiesce in the board with their intentions. The service of the petition was followed by an intimation from the Messrs. McCalmont that they desired to suspend their proceedings until a meeting of the shareholders could be held, and their views ascertained. The directors having no alternative step to suggest would support the action of Messrs. McCalmont, from whom the board had received uniform courtesy and consideration. There was some discussion at the last meeting with regard to the question of acquiring a property which had been offered to them on terms which would, it was said, give the company a chance of retrieving the losses they had made. Directly after the last meeting the directors telegraphed to the company's agent in San Francisco on the subject, and the reply received satisfied the board that the property referred to was not such as they could take up with any hope of success. The directors had given their time and services to the company, and they had asked only the confidence of the shareholders, and this confidence, they acknowledged with gratitude, had been given without stint. They had done their best under circumstances of great difficulty, and they deeply regretted that they had nothing but winding-up to suggest.

Mr. CLEMENTS (representing Messrs. McCalmont Brothers and Co.) said the time had arrived when it was not the part of wise men to struggle against the irresistible. The company was formed ten years ago, and in the course of its existence it had paid one dividend of 1s. per share. The misfortunes of the company were, however, in no degree attributable to the directors, who had done everything that could be done to make the mine a success, and a success it would have been if care, skill, patience, and hard work could have made it so. They had exhausted their efforts, and the funds were also nearly exhausted, and he thought the prudent course would be to wind-up the company as cheaply and expeditiously as possible. The reason why Messrs. McCalmont had not advised the directors before initiating the proceedings referred to was that they might be able to show, in case of any question being raised, that there was no collusion between them and the directors of the company. He moved "that the company be wound-up voluntarily under the supervision of the Court."

Mr. BROWN, in seconding the motion, said that before entering in the company, and inviting his friends to do so, he took what he believed to be the best advice he could obtain as to the value of the property, Mr. Ashburner, whom he engaged to inspect it, having been very highly recommended to him. The report he received was of such a character that he did not hesitate to invest in the company. He had, however, since learned that Mr. Ashburner did not examine everything for himself, but made his report on what he was told by those who were interested in selling the property. Such was the value of the reports of Californian experts. There was no doubt in his mind that they

had been induced to go into that which was neither more nor less than a downright swindle, and that the mine was deliberately "salted" to the knowledge of many persons in the district. Mr. Surry also bore testimony to the honesty, integrity, and great ability of the board, and said that the directors being among the largest shareholders, were also among the greatest sufferers by the swindle which had been perpetrated upon them.

Mr. BERTHILL fully endorsed the remarks made by two previous speakers with regard to the board, and expressed the hope that the liquidator would thoroughly investigate all the circumstances connected with the sale of the property and the formation of the company. There was a cloud hanging over these matters which he hoped would be dispelled by a searching and vigorous investigation.

Mr. J. C. BOLTON, after expressing his regret that the property referred to at their last meeting had been unfavourably reported upon, remarked that at the inception of the company an extraordinarily good opinion was entertained of the value of the property by the bankers of the company, and several of the gentlemen connected with the bank were shareholders in the company. The only person they could hope to take information out of was Mr. Coulter, and even if they succeeded in inducing him to visit England, he did not think that they would do any good for themselves.

Mr. A. BOWEN suggested that a portion of the small balance now remaining might be advantageously expended in obtaining an independent report on the property which Mr. Coulter recommended them to purchase.

The SOLICITOR of the company pointed out that the property was one which it was not within the power of the company, under its Memorandum of Association to acquire, the Memorandum providing that any property purchased should be contiguous to their mine or "convenient to be held therewith."

This property was situated about 200 miles from the London and California Mine. Of course, those shareholders who believed in the value of the property recommended to them by Mr. Coulter could form a new company to acquire and work it.

The CHAIRMAN added that the property referred to was wholly undeveloped, and would require 10,000, at least to be raised before commencing to develop it. The CHAIRMAN, in reply to a question, said that the report of the committee of investigation appointed some years ago was not published as it was found by the committee that nothing could be done to clear up matters, or to repay the stockholders for the losses they had sustained.

After some further conversation, the motion was put and adopted with two dissentients. As the motion was not unanimously adopted it became necessary that a poll should be taken. This was done at once, and resulted in confirming the adoption of the motion by 891 votes to 135.

Mr. C. L. NICHOLS was appointed liquidator, and the meeting closed with a cordial vote of thanks to the Chairman and directors.

SCHWAB'S GULLY DIAMOND MINING COMPANY.

DE BEER'S MINE, KIMBERLEY, SOUTH AFRICA.

The quarterly meeting of this company was held at the office, in Kimberley, on Oct. 24.

Mr. A. MCGREGOR in the chair.

The SECRETARY read the notice convening the meeting, the minutes of the last quarterly meeting, and of a special meeting held on Aug. 1.

The following report for the three months ending Sept. 30 was then read:—

In laying before you the balance-sheet and profit and loss account for the quarter ending Sept. 30 last, the directors beg to congratulate you on the continued prosperity attending the company's operations. The amalgamation with Messrs. B. and W. J. Ling's ground as sanctioned by a special general meeting of shareholders, held on Aug. 24 last, has fully realised the expectations of the directors, and although sufficient time has not yet elapsed to feel the material benefit derived from the same, the directors feel convinced that next quarter's result will give more tangible proofs of the advantage gained by the step alluded to. Since the amalgamation the high ground thus acquired (fully 50 ft. above the level of the company's old claims) has received the manager's first attention, and the blue ground worked has turned out of very good quality, judging from the amount of pickings obtained therefrom. The ground being in a particularly favourable position hauling could be carried on with far better results than at any previous time, and at only very slightly increased expenditure, and the company at the end of the last quarter had the satisfaction of having in its floors no less than 18,755 loads, a quantity far in excess, comparatively speaking, of that of any other company, and which at the mere calculation of the actual cost of depositing the ground on the floors (say, at about 5s. per load), would leave a further profit of 4688s. 15s., over and above the balance shown on the profit and loss account. The stock of blue ground has since been further considerably increased, and your directors expect soon to have a sufficient quantity on the floors to obviate the necessity of artificially breaking up the ground, which is at all times a very costly process, and to be able to leave the pulverisation mainly to be effected by natural causes. As a further advantage gained by the amalgamation it may be stated that a considerable larger area being now workable, the level of the company's claims will in future be raised above that of some of the neighbouring companies, thus greatly reducing any danger of flooding. Washing operations could only be carried on for a limited time, owing to the ground not being sufficiently pulverised. Since the late rains, however, they have again been resumed, and are now being carried on regularly without any fear of interruption for months to come.

The work done during the quarter was as follows:—
Blue ground hauled 17,699 loads.
Reef and stones hauled 742 " "
Ground hauled for other claimholders 5 " "
Total number of loads hauled, in 70 days 18,446 loads.
Blue ground on floors June 30, 1882 7,594 loads.
Do., hauled during quarter 17,699 " "
Total 25,293 loads.
Blue ground washed in 46 days 8,533 " "
Blue ground taken over from Messrs. B. & W. J. Ling 16,755 loads.
Quantity of blue on floors Sept. 30, 1882 16,755 loads.

The quantity of diamonds found was 7552½ carats, realising 9794s. 12s. 3d. The balance of profit and loss account, 4088s. 15s. 3d. directors have deemed advisable to carry forward. At the same time they have much pleasure in declaring an interim dividend of 5 per cent., payable from the 1st prox., the additional results obtained since the commencement of the new quarter fully warranting such a course. The directors would suggest the advisability of creating a general reserve fund out of the net profits by the appropriation of a certain percentage to be determined by you.

BALANCE-SHEET, SEPT. 30, 1882.

LIABILITIES.	
To capital account (12,200 shares at 10s. each)	£122,000 0 0
" sundry creditors' account	583 12 0
" dividends unclaimed	119 8 0
" profit and loss account	4,068 16 9
	£126,714 16 9
ASSETS.	
By claim account	£116,500 0 0
" machinery and plant account (old)	£3500 0 0
" Do. (new)	908 5 11 = 5,408 5 11
" livestock account	385 10 0
" office furniture account	53 0 0
" sundry debtors, accounts	1,065 0 0
" stock account (diamonds, fuel, produce)	343 2 4
" diamond account (stock on hand)	451 17 0
" cash at Standard Bank	1,593 1 6
	£126,714 16 9
PROFIT AND LOSS ACCOUNT FOR THE QUARTER ENDING SEPT. 30, 1882.	
To dividend account IV. (4 per cent. on 91,000s., declared July 10, 1882)	£3,760 0 0
" maintenance	365 7 1
" general working expenses account (wages)	2,332 19 8
" explosives account	342 9 10
" fuel account	650 10 0
" produce account	345 12 10
" rates and licenses account	1,125 10 0
" charges account (including transfer charges on claims purchased)	194 12 3
" salaries account	325 0 0
" balance carried forward	4,068 16 9
	£14,548 13 2
By balance from last quarter	£4,898 9 8
" diamonds sold and on hand (less commission)	9,650 8 6
	£14,548 13 2
1882—Oct. 1, by balance	£4,068 16 9

ALEXANDER MCGREGOR, Chairman.
C. HADERNANN, Secretary.

We hereby certify that we have examined the books and vouchers of the Schwab's Gully Diamond Mining Company, De Beer's Mine (Limited), and that the above balance-sheet is true and correct.

Kimberley, Oct. 20, 1882.
The CHAIRMAN said that, as the diamond market was low at present it would be advisable to defer the payment of the dividend until Nov. 1. The company had several parcels on hand.—No opposition was expressed.

On the proposition of Mr. J. B. TAYLOR, it was resolved that the report and balance-sheet be adopted.

The CHAIRMAN said that by adopting the report the meeting had approved of the directors' recommendation as to a reserve fund, which was considered necessary for machinery and other purposes. It was now for some shareholder to suggest how the reserve fund should be made up.

Mr. BERT proposed that the reserve fund should consist of 5 per cent. on the net profits, as shown by the quarterly profit and loss accounts, which was adopted.

Mr. BERT proposed that the directors, manager, and secretary receive a bonus of 50s. each. To their energy and care was largely to be attributed the flourishing condition of the company, which was carried unanimously.

The CHAIRMAN, on behalf of the directors returned thanks.

Mr. MCGREGOR remarked that he believed there was not a better managed company on the fields than Schwab's Gully.

The MANAGER and SECRETARY said that the gift was unexpected, but it would

be an incentive for them to put forth their utmost endeavours to ensure the prosperity of the company.

It was resolved that the auditors receive 7 guineas each for the last quarterly audit. There being only two nominations for the vacant seats on the directorate (Messrs. A. Belt and W. J. Ling), the CHAIRMAN declared those gentlemen duly elected. The proceedings closed with a vote of thanks to the Chairman.

NORTH PENSTRUTHAL MINING COMPANY.

The ordinary general meeting of shareholders was held at the offices, Drapers' Gardens, Throgmorton Avenue, on Wednesday, Mr. JAMES PETRIE in the chair.

Mr. EDWARD ASHMEAD (the secretary) read the notice convening the meeting, and the minutes of the preceding meeting, which were confirmed. The statement of accounts for the five months ending, with the costs paid, on Oct. 17 showed that the labour costs had amounted to 731l. 2s. 10d., and the merchants' bills to 366l. 0s. 9d. The balance of liabilities over assets was 804l. 4s. 4d. The call unpaid amounted to 376l. 12s. 6d. He also read the agent's report, as follows:—

Nov. 20.—Since the last general meeting we have driven the cross-cut north and intersected the Highburrow lode (of which we shall mention hereafter), cut the pit or lodge for the stuff, also winze pit, sunk the shaft 4½ fms. below the 132 fm. level, cut eastern pit, bearer holes, put in bearers, cisterns, and fixed a drawing-lift. The ground has been composed of elvan of a hard nature, retarding the sinking, but is now changing for the better, and we calculate to sink in the future from 10 to 12 ft. per month. The lode in the 132 fm. level driving east, is 4 ft. wide, composed of capel, quartz, mundle, and a little oxide of copper and tin. The same remark will apply to this level driving west. The country rock about the lode in both these levels is of a friable nature. Driven east and west 10 fms. The lode in the 120 fathom level, driving west of shaft, is 4½ ft. wide, composed of capel, chlorite, arsenical mundle, and quartz; worth for tin, 6l. per fathom. Driven west of shaft 65 fms. The lode in the winze sinking under the 88 fm. level is unproductive. The 58 fm. level cross-cut is driven north 7 fms. The last 10 fms. have been in the elvan course, where we expect to find the lode underlying it, and are daily expecting to reach it. From the friable nature of the rock about the lode in the bottom of the mine, and the position of the north lode with Highburrow, we consider indications are better than for a long time past.—STEPHEN DAVEY, WM. POLKINGHORNE.

The CHAIRMAN said: Gentlemen, I may say that having spent a few days at the mine last week enables me to say from personal observation and inspection that the engines, boilers, and machinery, are properly cared for, and in good order, and things generally on the surface are being carried out by our manager in a workmanlike manner. It also affords encouragement to find that as greater depth is attained the Highburrow lode becomes more mineralised, and more easy for driving, and though not at present worth very much the great change that has taken place in the character of the underlying rock, we think, strong anticipations of better things are long. I saw a pile of stuff, which the lode produced, taken from the 120 east, similar in colour and in other respects to that from which the Wheal Basset is at present making its returns. We quite endorse Captain DAVEY's views to confine our immediate efforts mainly to the sinking of the Highburrow shaft down to the 150, and driving the 132 west to get under the 120 end and the mineral-bearing portion of the 120 west. We are of opinion that we may reasonably expect a more productive lode at the 150, which will probably be below the junction of the Highburrow lode, and the north lode as shown in the circular issued to the shareholders after our last meeting. I think there is nothing else to notice calling for special remark. We are much in the position we expected to be in at this meeting, rather better than worse, because we had not then any of the tinstone we have met with in the 120 west. You will notice that the present statement of accounts is a five months' account. The balance at the last account was 891l. 17s. 2d., and the balance of liabilities over assets now is 804l. 4s. 4d., being a little less than it was five months ago. I, therefore, now move "That the accounts and report now read be passed, and adopted and printed and circulated among the shareholders."

Mr. H. WADDINGTON, in seconding the motion, said he had requested Captain DAVEY, of Wheal Uny, a man in whom he had great confidence, to inspect the mine on Monday or yesterday, and he had just received from him the following telegram: "Sorry could not attend before. Pleased with what I saw. Sink, and your prospects will improve." (Mr. H. Waddington) was of opinion that they were on the eve of meeting with mineral which would pay all their outlay and something more. The lode was a masterly and well-defined one, and possessed every element which would lead them to expect to find good results when they got down. They had agreed to put the shaft down as fast as possible to the 150, and if they could do that in six or eight months' time, with the improved character of the lode, he thought there was every reasonable hope that they would have a course of mineral at that depth. They would also at that depth hit the junction of the north and south lode, which would give them a large, and, in all probability, productive lode. In the north cross cut they had driven about 10 fms. through an elvan course, expecting to find the Gallish lode. If they found the lode on the elvan course, they would in all probability have a good course of mineral, for it was the rule that the lodes coming on an elvan course had made the greatest deposits of mineral. This was especially the case at West Basset, and he thought they might expect to meet the Gallish lode very shortly. He had taken the opinions of many mining people, and they were all of opinion that their western ends were most deserving of prosecution, and they were all of opinion that there was plenty of mineral there.

Capt. DAVEY said they had in the bottom of the mine as kindly a lode as any in the district. At the western end they had found some arsenical mundle which was generally an indication of tin in that district. He had assayed some of this stuff, and it had produced a large proportion of tin. His indications certainly led them to hope for good results at a little greater depth.

Mr. LAMB asked how many fathoms they would have to sink before reaching the junction of the north and south lode?—Capt. DAVEY said probably about 12 fms., which would take six or seven months.

The report and accounts were then adopted.—The CHAIRMAN proposed a call of 4s. per share, payable on or before Dec. 13.—Mr. WALTON seconded the proposition which was carried.

On the motion of Mr. LAMB, seconded by Mr. WALLWORTH, a vote of thanks was passed to the Chairman, and the meeting then closed.

SOUTH PENSTRUTHAL MINING COMPANY.

The ordinary general meeting of shareholders was held at the offices, Drapers' Gardens, Throgmorton Avenue, on Wednesday, Mr. JAMES WALTON in the chair.

Mr. EDWARD ASHMEAD (the secretary) read the notice convening the meeting and the minutes of the preceding meeting, which were confirmed. The accounts for the five months showed a balance of liabilities over assets of 1247l. 18s. 9d., the assets including arrears of call, 192l. 15s. of which (on forfeited shares) was considered doubtful. The labour costs amounted to 904l. 7s. 11d., and the merchants' bills amounted to 541l. 10s. 6d.

The following report from the agents was read:—

Nov. 20.—Watson's Engine-Shaft: Since the last general meeting we have cut pit at the 83 fm. level, and sealed the same with timber, put in skip-rod from the surface to the bottom (113 fms.), cut western-pit, bearer latches, put in the bearers, cisterns, and fixed the drawing-lift, and brought down one piece of main rod, making the work so far complete to the 83. The lode in the shaft is 8 ft. wide, composed of capel, quartz, chlorite, mundle, and a little black oxide of copper. I would mention here the water is highly charged with copper, and judging from appearances, an early improvement may be expected, where several levels from the east shaft are available to be driven into and through it. The shaft is sunk 5 fms. below the 83.—Simmons' Shaft: We have cleared this shaft from the back of the 60 to the 70, communicating with the engine-shaft, also cleared and secured the 60 80 fms. west of engine-shaft; the lode in the back and bottom of this level is 4 ft. wide, producing a little black and grey copper. Had labour been cheap this ground would work on tribute.—Patrol Shaft: This shaft is sunk 4½ fms. below the 130. The ground is of a congenial character, interspersed with branches composed of quartz, with occasional good spots of yellow copper. These are dropping into the lode, which is 10 ft. wide, composed of sulphuric mundle and quartz. We have fixed a 9-in. pillar at the 130, also replaced the 8 in. at the 100 with a 9-in. pole, brought down main rods, footways, and other necessary timbering to the bottom of the mine complete; also fixed contractors' air-pipes, &c., from the engine to the bottom of the mine. The contractor has commenced sinking this shaft with boring machinery, which will be rapidly sunk to another level, where it is reasonable to expect, after more than probable, a rich bunch of yellow copper will be met with. The plant and machinery on the mine are in good order and working efficiently.—S. DAVEY.

The CHAIRMAN moved, "That the accounts and report now read be passed and adopted, and printed and circulated among the shareholders." Before putting that to the meeting Capt. DAVEY, who was present, would be happy to reply to any questions with regard to the working of the mine.—Mr. PETRIE seconded the motion.

Capt. DAVEY, in reply to Mr. McKEAND, said the water in the bottom of the flat-rod shaft was kept down by the engine going about a stroke and a-half a minute, and would not interfere much with the boring machinery. The boring operations had been commenced, and would probably do the work in about 1½ the time that would be occupied by hand labour. They would drive the 110 fathom level back to the ground which was now being opened up. The great bulk of the expenditure has been on surface operations, but everything was now in first-rate order. They had sunk the flat-rod shaft about 4½ fms. below the 130 fathom level; and they had found several branches across the shaft from the south to the north lode, composed principally of quartz intermixed, or dotted, with yellow copper ore, which was an exceedingly good indication. The lode was 10 ft. wide, and he believed they were getting very near a good bunch of mineral. They were sinking over the lode.

The CHAIRMAN reminded the shareholders that at the last meeting it was decided to have the flat-rod shaft sunk by machinery. Sinking was actually commenced on Monday last, and Mr. Hosking, the manager for the contractor, had telegraphed to this effect:—"We have blasted first cut in shaft last night, and made 2 ft. 6 in., in which I see no reason to alter what I wrote to you yesterday." (Letter having reference to the probable time required for the sinking.) He could not help thinking that, as on the Continent, shaft sinking in future would be done by machinery. The cost of machine sinking was larger than that of sinking by manual labour, but the saving in plant and in standing costs was very great.

Mr. H. WADDINGTON said the contractor was in hopes of having the flat-rod shaft sunk 30 fms. below the 130 in about seven months' time, which would be a great advantage to them. It was the general opinion that at that or a less depth they would have a mine of great value, and he believed it would be as rich as Trevelyan was at that depth. The presence of sulphur was a very encouraging indication, for there could be little doubt it was the forerunner of a

good deposit of copper. There had been a great prejudice in the county against sinking by machinery, but he believed that that would be the mode of sinking shafts in the future, as it would obviate the long and tedious process of getting shafts down by hand labour.

The CHAIRMAN, in reply to Mr. McKEAND, stated that the contract price for sinking was 39l. per fathom.

The report and accounts were then adopted.

The CHAIRMAN proposed a call of 6s. 6d. per share.—Mr. PETRIE seconded the motion, whereupon Mr. WADDINGTON suggested that a 5s. call would be sufficient. After some conversation the call was fixed at 6s. per share, payable on or before the 13th prox.

On the motion of Mr. LAMB, seconded by Mr. McKEAND, a vote of thanks was passed to the Chairman, and the meeting closed.

CATHEDRAL CONSOLS MINING COMPANY.

The ordinary meeting of shareholders was held at the offices, Drapers' Gardens, Throgmorton Avenue, on Wednesday, Mr. JAMES LAMB in the chair.

Mr. EDWARD ASHMEAD (the secretary) read the notice convening the meeting and the minutes of the preceding meeting, which were confirmed. The accounts for the five months ending, with costs paid, Oct. 14, showed that the labour costs amounted to 728l. 1s. 2d., and the merchants' bills to 412l. 10s. 9d., the balance of liabilities over assets being 684l. 6s. 3d. The calls unpaid were 141l.

The agent's report was as follows:—

Nov. 20.—Since the last general meeting we have sunk the engine-shaft 10 fms. 4 ft. below the 60, 9 fathoms of which have been sunk during the last 18 weeks through a lode varying in size from 3 to 3½ ft. wide, composed of fluor spar, quartz, mundle, and yellow and grey copper ore, worth at times for length of shaft from 1 to 1½ ton per fathom. The 60 is driving east of engine-shaft 17 fathoms through a lode varying in size from 22 to 3 ft. wide, composed of quartz, fluor-spar, mundle, and copper, worth for the latter about 2 tons per fm. The lode in this end has very much improved in the last 6 ft. driving, and, judging from the character of the lode and its approach to the elvan course, we believe a continuous run of ore is met with. The winze sinking below the 50 has been communicated to the 60, giving good ventilation. In Lawry's shaft we cleared and secured the 10 fathom cross-cut so far north as the old engine-shaft, which we find gone together; consequently had to abandon any further search in that direction, since which we have driven east on the old lode 8 fathoms, but are from the incessant rains necessitated to abandon all operations, being unable to cope with the great influx of water. This refers to the old mine, and does not effect in any way the general work in the other parts of the mine. The prospects of the mine never looked more cheering than at the present, all the constituents of the lode are such as produced the largest quantities of copper in the district.—S. DAVEY, S. DAVEY, JUN.

The CHAIRMAN regarded the report as a very cheering document, and said he thought there was every probability of making the mine a success, particularly as the lode was now worth 2 tons of ore to the fathom, and was improving. Directly they got under this lode they would be able to make returns. He moved the usual resolution for the adoption and circulation of the report and accounts.

Mr. H. WADDINGTON seconded the motion.

Capt. DAVEY gave some details regarding the working of the mine, and expressed his belief that brighter days were in store for the mine.

Mr. WADDINGTON confirmed the favourable views entertained as to the future of the mine, and he believed that within 12 months they would have a property worth about a month's working.

The motion was then adopted on the proposition of the CHAIRMAN, seconded by Mr. WADDINGTON, a call of 2s. 6d. per share was made, payable on or before the 13th proximo.

Capt. DAVEY, in reply to a question, said they would make one sale of ore at all events before the next meeting.

Mr. PETRIE said he had inspected the mine recently, and found everything in very satisfactory order. He went quite unexpectedly, and had brought with him some very fine specimens of yellow copper ore, which were on the table. The appearance seemed very promising, more particularly as the copper was of a very high standard of value. He moved a vote of thanks to the Chairman.

This was seconded by Mr. WADDINGTON, and carried, and the Chairman having acknowledged the compliment the proceedings closed.

BEDFORD UNITED MINING COMPANY.

The eleventh ordinary general meeting of shareholders was held at the offices of the company, Church Court, Clement's Lane, on Thursday.—General H. C. TATE in the chair.

Mr. T. B. LAWS (the secretary) read the notice convening the meeting, and the minutes of the preceding meeting, which were confirmed.

The directors and agents reports having been read, Mr. STRACHAN moved the adoption of the reports and accounts as forwarded to the shareholders.

Mr. PHILLIPS suggested that in future the report of the directors should accompany the statement of accounts.

The CHAIRMAN said the subject should have consideration. It was quite immaterial when the directors sent the report out. It was, however, to be observed that by presenting the report at the meeting they were able to bring the facts up to a later date than they could otherwise do. In the present instance the agents' report was much more favourable than if it had been sent out with the accounts.

In reply to a question, Capt. TREZISE stated that during the half-year 346 tons 9 cwt. of ore had been sold from the Bridge lode, and 173 tons 8 cwt. from the North lode.

A SHAREHOLDER asked if there was any reason to expect an improvement in the shallow levels in depth which would admit of the returns being kept up?—Capt. TREZISE thought there was every reason to expect that the mine would improve in depth. The machinery was in splendid order, and the prospects were very encouraging.

A SHAREHOLDER asked what quantity of ore was on the mine ready for market?

Capt. TREZISE replied that there were 92 tons from the Bridge lode and 24 tons from the North lode being sold that day, and they had ready for sale 120 tons—about a month's workings. Of course there was always a little stuff broken and ready for raising.

The SHAREHOLDER asked how the current sale compared with the previous one?—Capt. TREZISE believed it would show an advance of 75l., the difference between 524l. and 600l. They had also about 50 tons of mundle at about 12 per ton, raising the month's returns to 660l., while the costs and merchants' bills would amount to 567l. There would be a profit of from 50l. to 100l. after paying royalty and all other expenses.

The SHAREHOLDER asked if they were pretty sure of maintaining the present rate of return?—Capt. TREZISE said he hoped so, and believed they would. He would do all he could to bring about satisfactory results. In the 30 east they had got into a very fine lode, valued at the present time at 20l. per fathom. If, as he hoped, they found the same run of ore in the 42 east it would materially increase the returns.

The reports and accounts were then unanimously adopted.

Capt. PHILLIPS said he considered the financial position of the mine a very good one. It appeared by the accounts that they had 78l. in the bank, 516l. owing for ores sold, and 215l. unpaid calls, with mundle and copper at surface to the value of 560l., against which their total liabilities were 759l., including the costs only just due. It should be borne in mind that a great deal of our expenditure during the last six months was of an exceptional character, and as our returns were increasing, he felt sure that a good dividend might be declared at the meeting in May. He had recently paid a visit to the mine, and was greatly pleased with their excellent prospects.

Mr. BAILEY proposed a cordial vote of thanks to the Captain for his attention to the affairs of the mine.

Capt. TREZISE said he was grateful to the meeting for the kindly feeling shown towards him, and it was his endeavour to do all that lay in his power to further the interests of the mine. The shareholders had been putting their hands into their pockets for a long time, and it was his earnest desire to have the mine making good profits. On the Bridge lode they had as fine a gossan as one could wish to see, and indications went for nothing if they had not there something very good indeed. The 42 had not come into ore so soon as he expected, but this was in consequence of the lode having gone flatter. They had a splendid lode in the 30 east, worth fully 20l. per fm., which in his opinion would continue for some distance. The ends on the north lode had also improved lately, and this was a matter for congratulation seeing they were approaching the great cross-course, where such large deposits of ore were made on the Wheal Marquis lode.

A vote of thanks to the Chairman and directors brought the meeting to a close.

DEVON GREAT UNITED MINING COMPANY.

The ordinary general half-yearly meeting of shareholders was held at the offices of the company, Austin Friars, on Thursday.

The Right Hon. Lord CLAUD HAMILTON in the chair.

Mr. W. H. ALLEN (the secretary) read the notice calling the meeting; the report and accounts were taken as read.

The CHAIRMAN, in moving the adoption of the report and accounts, said the expectations of the directors had not been quite realised, that was to say the good results which were anticipated had not been realised. This had not diminished the confidence of experts, and those connected with such matters, in the value of the mine. All the operations in the way of repairs, erection of machinery, pumping, and so on had been carried out efficiently and economically, but the production hitherto had not been what was anticipated. The production was of value, as would be seen by the report, but it had not been sent to market. There was nothing discouraging in any way in the working out of this property, except that they had not hitherto come upon what they believed would eventually be found. The works had progressed more rapidly since Aug. 28, since which date the rock-drills had been at work, and they had worked more than 22 fms. since they were set in motion. All the machinery was in excellent order, and every economy was being practised. Therefore the position of the mine was a healthy one, although the directors were disappointed that they were not able to bring the property as much as they anticipated. He moved the adoption of the directors and agents' reports, and the statement of accounts.—Mr. PETER WATSON seconded the motion.

Mr. M. BAILEY, by means of a plan, described the position of the workings, and what was intended to be done. He said the object of the company was to

push west to the cross-cut, where they considered they would get some very good returns, and they still thought they would do so. They had driven a level 8 fms. west, and intersected a caunter lode, which had disordered the lodes there. They cut through it, and drove south, and got a branch of ore. From that point they drove 12 fms. west, and it became very small, and they were so dissatisfied with it that they went back and started to drive on the caunter, to see if the lode had been thrown in that direction. They were now driving west there, and continuing the cross-cut south to intersect any south lodes coming from the Devon Consols. They believed that by pushing back they would make discoveries. He advised the continuing of the level to intersect the north lode from the West Maria and the Capel Tor lode, but to do this there must be a considerable amount of dead work. He did not consider they had laid out a very considerable sum in developing the mine. He should be very sorry to see it abandoned after spending 5000l. to 6000l. in underground investigation. The lowest part of the working was close to the point where great discoveries were made in Devon Great Consols. During the last 10 or 12 years a Cost-book company had sunk a shaft 90 fathoms deep, and returned large quantities of copper, and their object was to push westward as well as develop it. But there was some little misunderstanding, and it was eventually abandoned, and the present company's object was to start back westward and lay open the lodes which passed through there. It had been cut in Wheal William, which belonged to this company, so that whenever it was cut it would be followed two miles in length. He considered they had a good property, but it would take time and money to develop it. They were not spending very much—only 300l. or 400l. a month. They had three engines at work there, and there were the employees to pay. He considered they were doing the work very economically. Since Aug. 23 they had driven 22 fms., and when they confined their attention entirely to pushing back west they would get through a very considerable quantity of ground per month. They were driving in the direction of Devon Great Consols from the bottom of one of the shafts, which was a very important point, which he recommended should be pushed 120 east and west; from the 70 to the 80 there was a fine course of ore when they pushed back westward. They should also drive east to the extent of the boundary, and then push south to the level west there. That was a work which he should propose very strongly, believing that if they carried it out they would get very good results.—A SHAREHOLDER: You say ore was found at Wheal Williams; why not work there?

Mr. BAILEY said that if the shareholders were prepared to expend 7000l. or 8000l. in machinery and pumps he should be ready to go on there, and they ought to do so if they had the capital.

Capt. RICHARDS, in reply to a question, said he considered the future of the property a very fine one, and he had every confidence they would find ore.

Mr. PETER WATSON said he would not detain them at any length. They had a call balance 275l. 11s. 8d., and there was due on the call recently made 312l. 15s., which brought up the amount to 587l. Then there was the ore, which was estimated to bring in 300l., so that there would be altogether a credit balance of 2705l. 6s. 8d., which would be sufficient, with the outstanding call, to go on for ten months at the rate of 300l. a month. In that time they hoped to have some good discoveries. They had sunk from the 204 to the 220. The directors visited the mine on Sept. 25, and gave instructions not to play with the property but to work it, and see what the ground was made of. If the ore were there they would endeavour to find it. If not they could not help it. They were working somewhat in the dark in driving levels and sinking shafts; but they were working according to indication, which were good. He did not know any mine in the two counties better situated than this, considering that within two or three stones throw was the spot where the great discovery was made in Devon Consols some years ago, which was the greatest discovery of copper ore ever made in this country or in Europe. The great question was whether the different lodes which were running through the property would come together to form a junction, and if they should form a junction they could not fail to have a good mine. He remembered the case of a mine where the shares were selling for half-a-crown each, and where a grand discovery was made by the lodes coming together, and the shares went up from 2s. 6d. and 5s. to 60l. per share.

In reply to Mr. RICHARDSON, Mr. WATSON said the lords were Earl Fortescue, Mr. Willeford, and the Duke of Cornwall. The royalty was 1-18th. A large amount had been expended in rock-boring machinery, new boilers, and so forth; the western portion of the mine was what was called a hopeful piece of ground. It was good kila and strata, and if they had this junction of lodes they would have something very good indeed. In reply to a question, Mr. Peter Watson said the last call had been very well paid.

Mr. BAILEY said there was plenty of machinery &c., on the mine, which originally cost 20,000l., which was handed over to this company for 5000l.

A SHAREHOLDER: Do you bring anything to surface which produces money? Mr. BAILEY said they had mundle and copper ore, and at any moment they might make a discovery which would pay the cost. He could offer 300l. for the stuff at surface now, but it would be sold in the best market possible. He suggested they should burn the ore themselves instead of selling the arsenic in the copper ores. There was a furnace which could be let at a moderate rent to the company.

The resolution for the adoption of the report and accounts was put and carried. A vote of thanks to the Chairman and directors closed the proceedings.

COPIAPO MINING COMPANY.

At the meeting of shareholders on Friday, the directors will submit the audited accounts for the year ended June 30.—The profit for the 12 months amounts to 19,783l. 8s. 9d.; to this has to be added the balance brought forward from 1881, 7712l. 8s. 4d.; making an available total of 27,495l. 17s. 1d. From this sum to be deducted the following interim dividends:—Feb. 27, 1882, 1s. per share, 2377l. 10s.; May 31, 1s. per share, 2377l. 10s.; Sept. 13, 1s. per share, 2377l. 10s.; leaving at the credit of profit and loss, 20,353l. 7s. 1d. Subject to the forfeited shares, as referred to below, being disposed of, the directors recommend that from this balance a dividend of 5s. per share be declared. Should this appropriation of the profits of the company meet with the sanction of the shareholders, it is the intention of the directors to make a call of 2s. per share, the payment of the call to precede the payment of the dividend so that the directors may be empowered to deduct from the dividend 2s. per share, and apply the same to the payment of the call. The object of this call is to place the shares of the company in a more negotiable form, and also to increase the working capital of the company.

As regards the mines, the Dulcinea holds out equal expectations, and on June 30 the estimate of reserves was equal in quantity and quality to what could be seen of them at any previous period. Beyond the information given to the shareholders in the monthly reports the directors have nothing further of importance to communicate. Of the year's profits the landed estates have yielded 2728l. 18s. 8d., and Mr. Fowditch reports that the prospects for this current year are encouraging. Referring to the accompanying circular and form of tender for the forfeited shares, it may not be known to all the shareholders that the profits of the company have been absorbed in many ways as its working capital, and that, therefore, those profits could not be divided to the extent earned. To obviate this, the directors have resolved to dispose of certain forfeited shares. As there are not a sufficient number to allot *pro rata* among the whole of the shareholders (as only those having 29 shares and over could participate), the directors have deemed it best to invite tenders for them, so that every shareholder may have an opportunity of offering, and, if possible, securing an allotment. The directors have, therefore, to invite the attention of shareholders to the circular and form of tender, and to request those of them who wish to offer for all or any portion of the shares to do so on the form sent, and to send it in, addressed to the directors, not later than 11 A.M., on Dec. 1. All such tenders will be opened in presence of the shareholders before the business of the meeting called for that day. Should an amount proportionate to the value of the shares be realised by the sale of these forfeited shares, the company will possess a working capital of nearly 20,000l. in addition to its landed estates and mines. The directors have received, from a gentleman holding a large number of shares, a letter, informing them that it is his intention to propose at the meeting that the remainder of the directors' fund for the current year should again be altered, be increased from 700l. to 1000l. per annum. The directors think it right to make special mention of this, so that the change may not be made without the knowledge of every shareholder.

The directors retiring on this occasion are Arthur Holland and J. Dunnington Fletcher, but being eligible for re-election, offer themselves accordingly.

The auditors, Messrs. Cooper, Brothers, and Co., and W. F. Moore, likewise now retire, but offer themselves for re-election.

THE CHANNEL TUNNEL.—Sir Edward Watkin, M.P., Chairman of the South-Eastern Railway Company, accompanied by a party of upwards of 130, who were chiefly members of the North of England Institute of Mining Engineers, visited, on Saturday, the Channel Tunnel works at Shakspeare Cliff, arriving by special train from London. Since the action of the Board of Trade, which resulted in an order preventing the further prosecution of the work, the company have faithfully adhered to the undertaking they then gave, and the boring operations have been entirely suspended. The only new feature for inspection on Saturday was the compressed air locomotive invented by Col. Beaumont, which during the last few weeks has been fitted up in the tunnel. It is a very ingenious piece of mechanism, compact, and very much like an ordinary boiler and in every respect answers its purpose. By means of this engine the party were conveyed in batches to the end of the tunnel, where the boring-machine still remains bearing the marks of protracted disuse. The various features of the tunnel and of the machinery employed were explained to the party by Col. Beaumont and Mr. Brady, C.E. (engineer to the South-Eastern Railway Company). In a short address given in the tunnel, Col. Beaumont referred to the progress of the works undertaken by the French company at Sangatte, France. He said the tunnel had now reached a distance of 467 yards, and was making a very fair average daily advancement. In the early part of the work they experienced considerable difficulty from the water they encountered while boring through the gault, but they had now got to the grey chalk, and the temporary dislocation had been overcome. This, their greatest engineering difficulty, was, therefore, now a thing of the past. Among the party who visited the tunnel on Saturday was Mr. E. Cumming Madden, of Berlin, who is the bearer of some important documents in favour of the tunnel scheme from General von Moltke, Lieutenant-General Waldersee (Quartermaster-General of the German Army), and other eminent German authorities. These documents will shortly be published.

FOREIGN MINING AND METALLURGY.

The French iron trade remains in much the same state. Orders have been numerous, and in the Nord merchants' iron has been maintained at from 7l. 12s. to 7l. 16s. per ton. While great activity has prevailed in the ironworks a little slackening has been noticed in the demand for plates. Merchants' iron has declined at Paris to 7l. 16s. per ton. The German iron trade has not materially changed. Pig has continued in no great demand, especially refining pig. The German ironworks have a good current of orders; but prices have slightly given way. The German steelworks have continued to be extremely well occupied. The exports of iron rails from Germany in the first nine months of this year are officially returned at 127,700 tons, as compared with 187,500 tons in the corresponding period of 1881. The exports of bars from Germany in the first nine months of this year are officially returned at 108,100 tons, as compared with 109,900 tons in the corresponding period of 1881. The exports of iron wire from Germany in the first nine months of this year are officially returned at 167,300 tons, as compared with 100,200 tons in the corresponding period of 1881. The seventh Congress of the Colliery Proprietors of Southern Russia has been held this week at Khankow. One of the principal subjects discussed at the Congress was the best means of developing the output of mineral combustible in the South of Russia, and also the extending metallurgical industry in the same district. An exhibition of combustible productions is to be held at Milan in the autumn of next year.

It is a matter of some difficulty to report the present condition of the Belgian iron trade. Coke has been held with much firmness, and pig has also been well supported, holders showing a strong unwillingness to make any concessions in regard to prices, while contracts are being entered into for a considerable time in advance. As regards the attitude of Belgian forgemasters, some of them appear to be well satisfied with the situation, while others are much less contented with it. Some industrials are overdone with work, and their order-books are full, so that they are refusing new contracts. Others, however, obtain new orders with difficulty. The construction workshops are very similarly circumstanced; rates for locomotives are advancing, and it is a matter of some difficulty to meet with them, but the makers of other descriptions of rolling stock are by no means active, and some of them are very moderately employed. To put the matter in other words, while some industrials are so overdone with work that they have to pass orders on to their neighbours, others are either reducing the number of their work-people or dismissing them altogether. In presence of this widely different state of affairs it is a matter of considerable difficulty to report the general tone of business. One fact is, however, evident—that coal and coke are supported with firmness, while some forges and workshops are very well employed. At the same time, and almost in the same breath, it may be added that iron is no longer quoted at 5l. 8s. per ton, while plates have been less well maintained at 7l. 12s. per ton. The general course of business in the United States, in Great Britain, in Germany, and in France is not, however, unfavourable, and it is possible, and even probable, that affairs may revive and improve in Belgium in sympathy. No. 3 casting pig has made 3l. per ton at Charleroi; refining has made 2l. 8s. to 2l. 10s. per ton at the same centre. Iron has ranged from 5l. 4s. to 5l. 12s. per ton. Girders have brought 5l. 16s. to 5l. per ton.

No change can be reported in the general condition of the Belgian coal trade. The demand continues considerable, especially for fine industrial coal. Coal for domestic purposes, as well as coke, is also disposed of readily; but these products are not quite in such active demand as industrial coal. The enquiry for household coal has been stimulated by a few days of cold weather, although it can scarcely be said that the winter has actually commenced at present. Stocks have generally disappeared, although working operations have been carried on with vigour, and to as great an extent as the supply of labour permitted. Upon the whole, it appears to be thought that an advance in rates is not improbable. To bring about anything like a decline in quotations the iron trade must experience a complete break up, and there is no immediate probability of anything of the kind being witnessed. The state of the German coal trade has not varied during the last few days; the demand continues sufficiently considerable to enable previous rates to be maintained; but an upward movement in quotations appears to be out of the question in consequence of the very large production which has taken place. Industrial coal has been in considerable request. The demand, indeed, appears to be increasing rather than otherwise. The same may be said of gas coal and coking coal; but the enquiry for household qualities has been, perhaps, less active. Too much attention must not be given to fluctuations of this kind, which follow with the alteration of cold and temperate weather. Deliveries have been proceeding from the German collieries with considerable activity, and efforts are being made to increase the exportation of German coal to Italy via the St. Gothard. Thus far the results attained in this latter branch of business have not been very striking. To meet the increased requirements of traffic it is stated that the Administration of the German State lines will shortly bring into circulation 150 additional locomotives, and 4000 additional trucks.

A TALE OF THE COAL MINES.—The reader's interest in a work of fiction can usually be measured by his acquaintance with the subject dealt with; so that a novel displaying the utmost possible literary talent, and embodying only pure English and refined language will be pronounced worthless by those accustomed to the vulgar slang of "society" of the present day, whilst a book the sole merit of which is that it is crowded with expressions and sentiments which were better unprinted will get a good reception. Mr. HENTY has undertaken to write a tale for miners and miners' friends—Facing Death, or the Hero of the Vaughan Pit. A tale of the Coal Mines. By G. A. Henty. London: Blackie and Son, Old Bailey—and in giving the biography of a pit-boy, the son of a collier killed by a fall of roof when the child was but two months old, who rose to be manager of the pit, he has been able to produce a sensational and not altogether improbable story, every line of which will be interesting and well understood by those connected with mines, and at the same time to introduce expressions of opinion in the dialogue the consideration of which by those for whom they are intended cannot fail to be beneficial to them. There are good accounts of dog fights, man fights, explosions, strikes, riots, imprisonment underground, and the like, as well as the more agreeable details of the rescue of those in jeopardy. The roughness of the collier is well portrayed, but the author has not failed to bring into equal or even greater prominence his good traits—his indomitable courage, his kindheartedness, and the permanence of his friendship. The volume is embellished with eight well-executed full page illustrations, and is very handsomely bound, so that it will form an elegant and appropriate Christmas present to very many readers of the Journal.

THE DUTEREL EXPLOSION.—An examination of the origin of the loss of the Dutereel has been undertaken by Mr. THOMAS ROWAN, a consulting engineer of Manchester, and he has given the result in an eighteen-page pamphlet just issued by Messrs. Spon, of Charing Cross. Mr. Rowan considers that the whole question of the conveyance on board ship of materials yielding vapours which with air become inflammable and explosive has not yet received that thorough examination which most assuredly it requires, and until this be done and efficient precautionary measures be enforced he fears that similar catastrophes will every now and then repeat themselves. As results he finds that the occurrence of explosions of gas from coal in the bunkers or holds of ships instead of decreasing has largely increased, and that accidents from substances like turpentine and benzoline are by no means unfrequent on board ship, and he adds that when besides these substances, as in war-ships, there are present large quantities of explosives like gun-cotton and gunpowder, the great wonder is that with the present system of treatment and carriage severe disasters do not take place with greater frequency. His suggestion is that in order to prevent flame being conveyed to the interior of magazines on board ship the magazines should be constructed with an external shell, a space being left between the walls of the magazine and the shell—and that this space should be so ventilated that any lodgment of explosive and inflammable atmosphere could not take place.

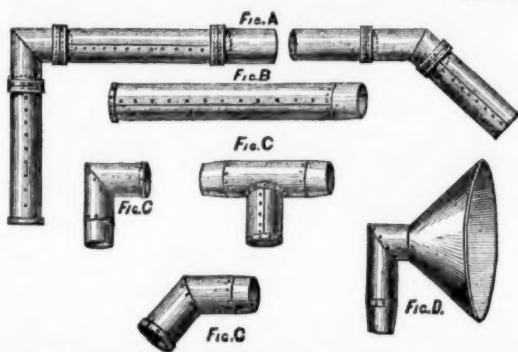
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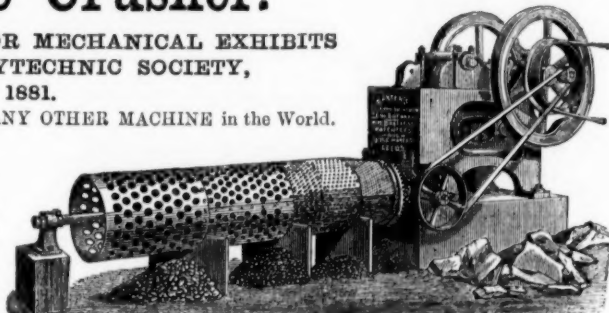
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Fig. B.—Straight length of tube.
Fig. C.—Different angle bends.
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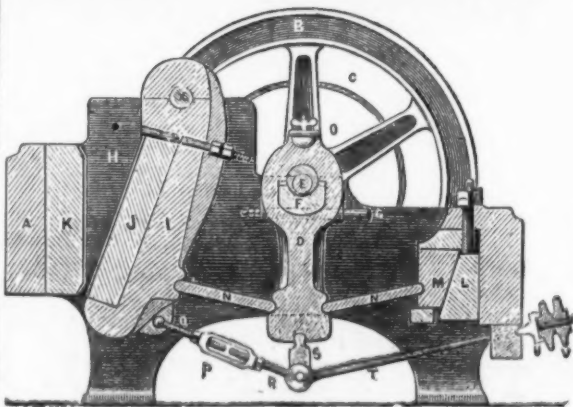
PATENTEES AND SOLE MAKERS

OF THEIR

WELL-KNOWN

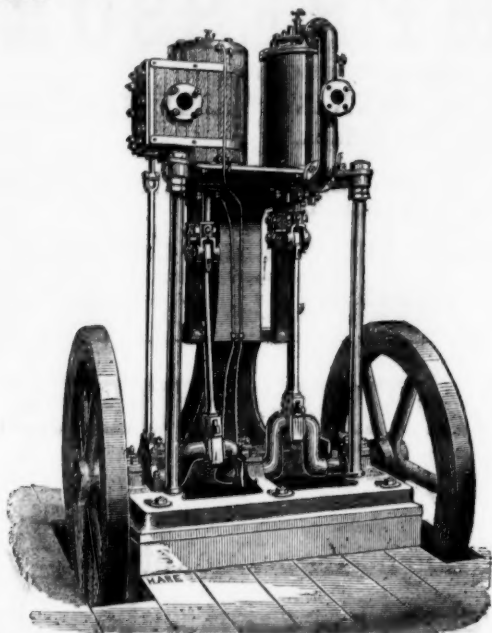
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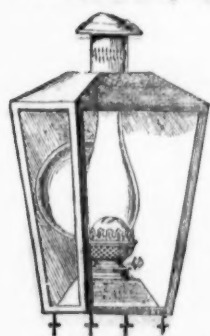
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No fear of age of Chimneys from Heat.

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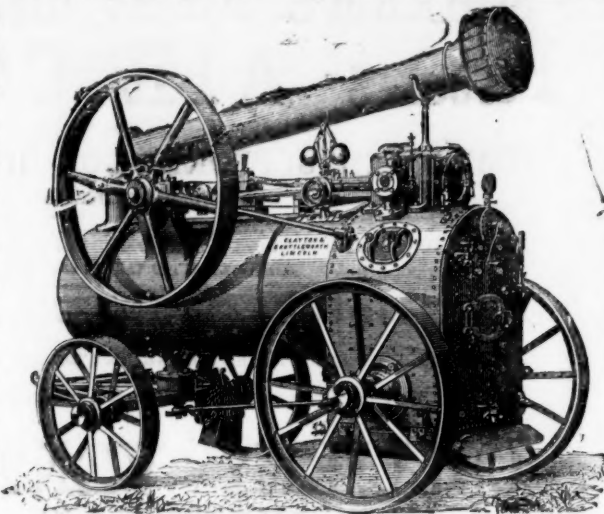
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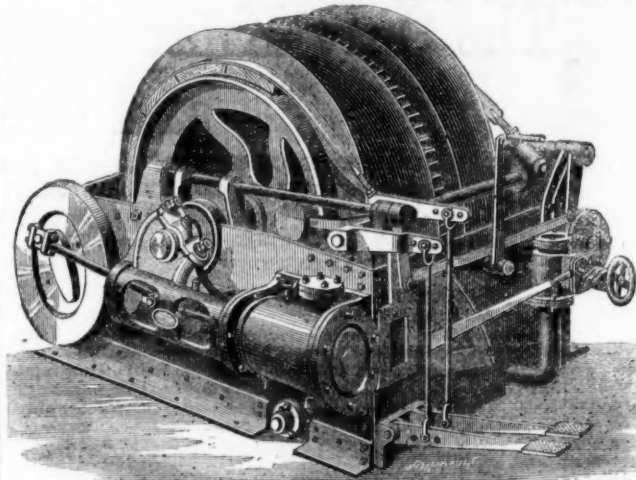


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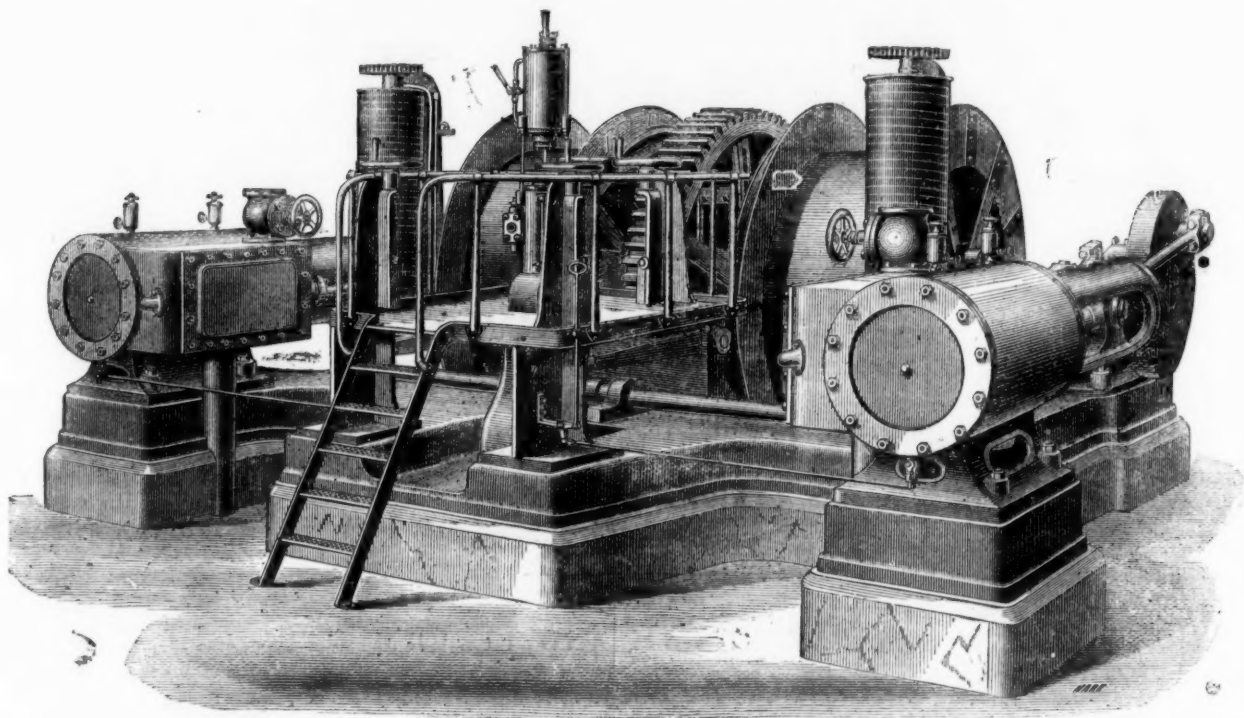
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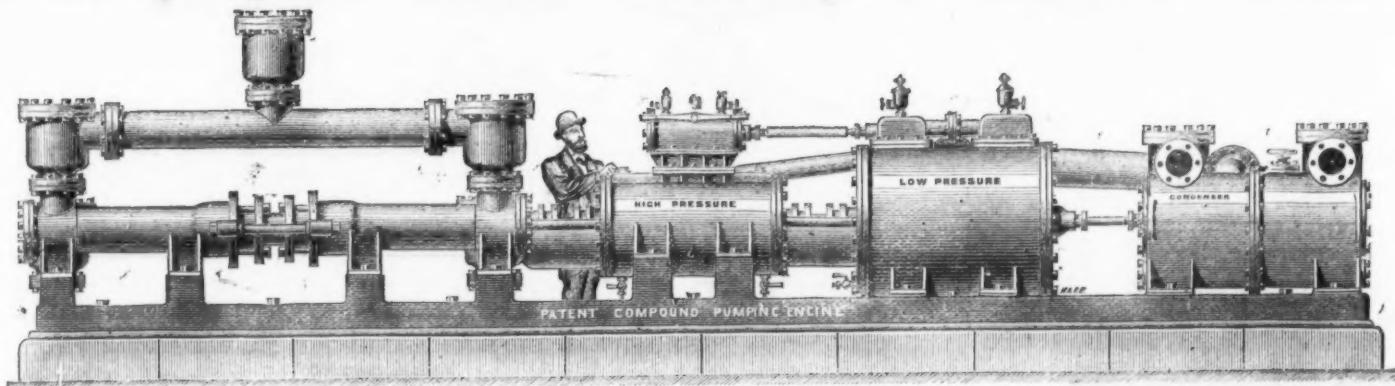
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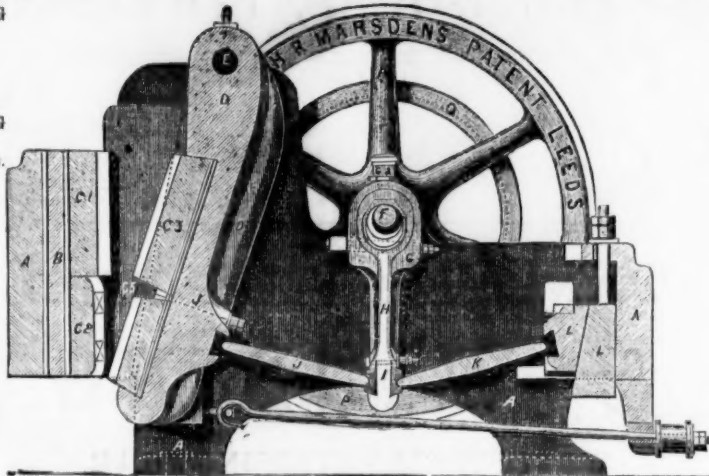
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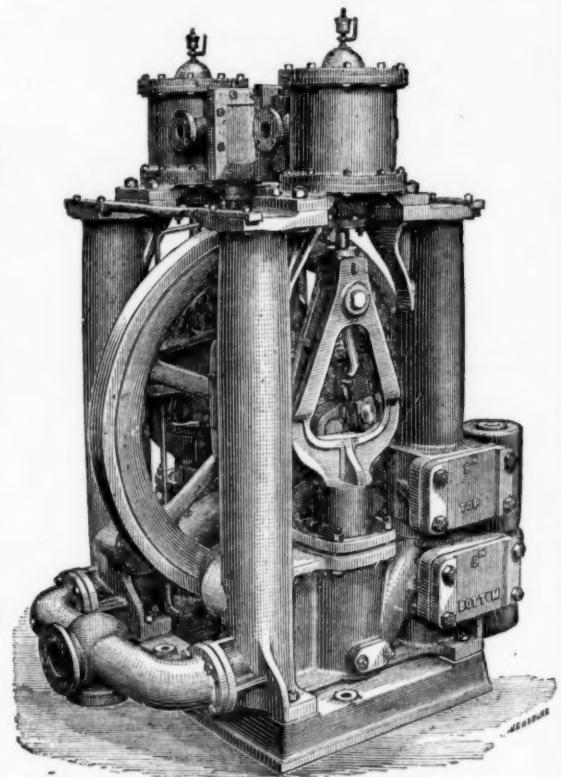
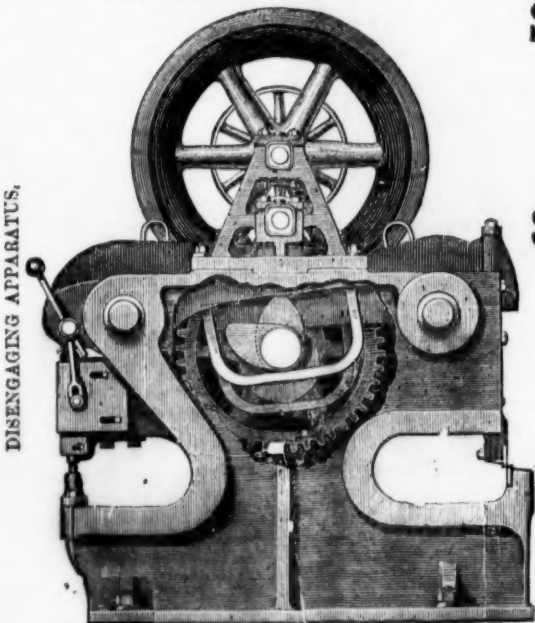
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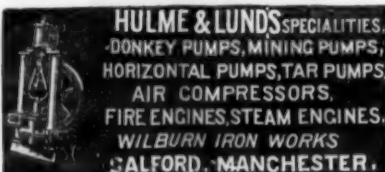
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